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FIRE ENGINEERING

A Consolidation of
FIRE AND WATER ENGINEERING *and* THE FIRE ENGINEER

APRIL 6, 1927

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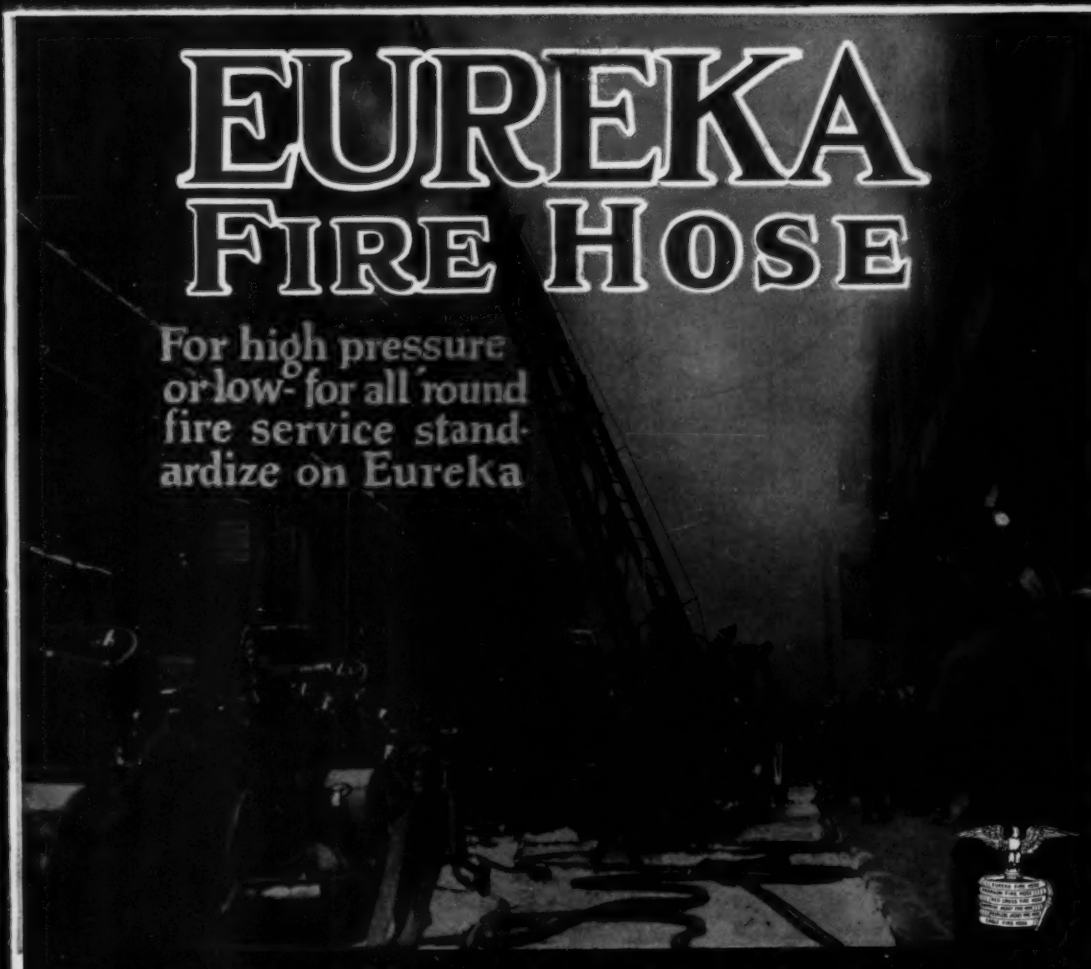
FIRE HOSE

For high pressure or low—for all round fire service standardize on Eureka



Eureka Fire Hose Manufacturing Company
50 CHURCH STREET, NEW YORK CITY
ATLANTA BOSTON CHICAGO COLUMBUS DALLAS DENVER DES MOINES DETROIT
KANSAS CITY LOS ANGELES MINNEAPOLIS NEW YORK PHILADELPHIA PORTLAND SYRACUSE

When it Comes to Coding Sirens

Do you know that there are just two ways by which a siren can successfully be made to code instantaneously, and that SIRACODE holds full patents on both?

Do you know that most of the other so-called coding sirens on the market today are nothing more than attempts to imitate these exclusive, patented features of the SIRACODE?

Do you know that the SIRACODE is a scientific fire alarm sound-producing instrument with far greater tone penetration than the old-fashioned sirens that do nothing more than make noise?

Do you know that the SIRACODE will function through any contacting device, or can be connected in a half day's time to any present box system without alterations of any kind? And that even on boxes as fast as one second, each blast of the SIRACODE is loud, distinct and readily distinguishable over a large area?

IF you are interested in providing your community with the best all-around coding siren that money can buy, a careful comparison will quickly prove the vast superiority of the SIRACODE.

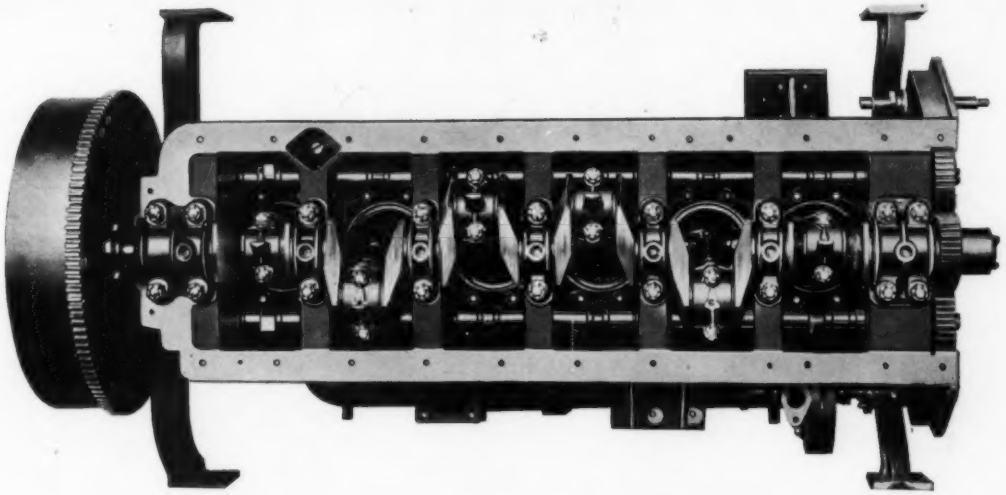
Write for complete descriptive literature. Or better still, tell us your problem and let our engineers show you the best solution.

SIRACODE SIGNAL CORPORATION

***(Formerly Heath Engineering Laboratories)*, 354 Pine St., San Francisco, Calif.**

SIRACODE

A Coding Siren and then some!



The Seagrave 7-Bearing Crank Shaft

An Open Letter About It!

At this time, when the Automotive Industry is featuring the adoption of the seven bearing crank shaft, it is interesting to note that more than sixteen years ago Seagrave introduced the seven bearing crank shaft in the field of motor driven fire apparatus.

It is even more interesting and very impressive to recall that the seven bearing crank shaft which was incorporated in the first Seagrave six cylinder motor, and which has been built into all Seagrave Sixes since that time—was not, by any means, an after thought. The result was a triumph in engineering and manufacturing, which set a new standard in performance; complete lack of vibration and smoothness of operation at all times.

It was inevitable, of course, that others in the industry should appreciate the advantages of the seven bearing crank shaft, and eventually adopt this feature—but the fact remains that Seagrave were pioneers in its introduction at a time when the automotive industry, as a whole, was in its infancy. Just as Seagrave has been first in leading every worth-while advance, in the design and manufacture of their product—so can Seagrave be depended upon to continue this leadership.

Very truly yours,

The SEAGRAVE Corporation

COLUMBUS, OHIO

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The Journal of the Fire Protection Profession Since 1877

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

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"Up to the Minute"

AGE is not a matter of years, and boys will be boys at 60 as well as at 6. It's a matter of your *spirit*, and the interest you take in the daily life about you.

¶ We recently received from Walkerville, Ont., the following letter that pleased us very much indeed:

¶ "I have been connected with the fire department for 43 years and have been a reader of your valuable paper during all of this time.

¶ "I have always found it up to the minute, and it has improved very much in the last few years."

Signed,
CHAS. H. MOORE.

¶ If FIRE ENGINEERING can help others, like Brother Moore, to continue a lively interest in their profession, irrespective of age, we shall feel that our job is worth-while.

The Publishers

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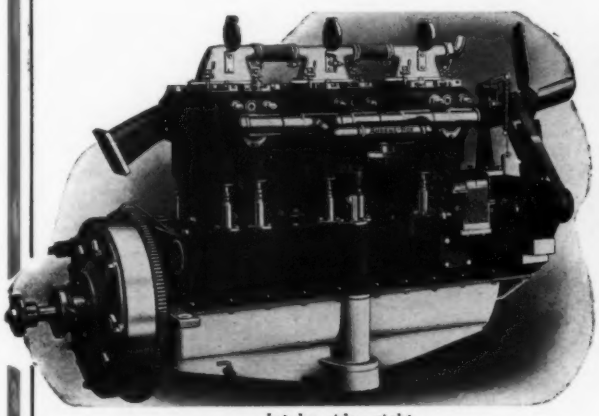
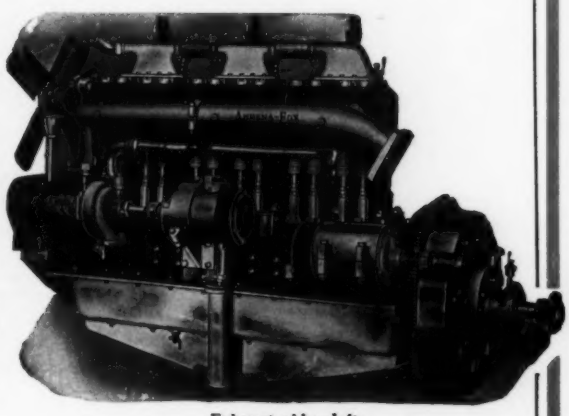
Ahrens-Fox



Intake side—right



Exhaust side—left

Super-Powered Motor

was Designed by Fire Engineers

"IT'S the motor that counts," is a phrase used by nearly all progressive fire officials. They realize that where a long run is called for and where you are forced to deliver hundreds of gallons of water per minute under high pressure—the brunt of the work falls upon the motor. It must not skip or fail—it must deliver.

The close contact of Ahrens-Fox engineers with actual fire service conditions and long experience in designing apparatus to meet these conditions thoroughly qualifies them to furnish municipalities with apparatus equipped with a motor of proven dependability and unquestioned service qualities.

Fire officials who realize the responsibilities of their positions and their duty of protecting the life and property of their town or city as far as humanly possible, know that quality and service are far more important than any other consideration. The cost of your apparatus is measured by service rendered over a long period of years, and not by the initial cost.

Hundreds of municipalities throughout the country who are fortunate in having such officials in charge of their fire departments are now equipped with Ahrens-Fox apparatus. Others are planning to make such purchases in the near future; and if you are interested in up-to-date fire apparatus we shall be glad to send complete information without obligating you in any way.

"Nothing is too good for fire service,
and nothing but the best will do."—Ahrens-Fox

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"Builders of Quality Fire Apparatus"

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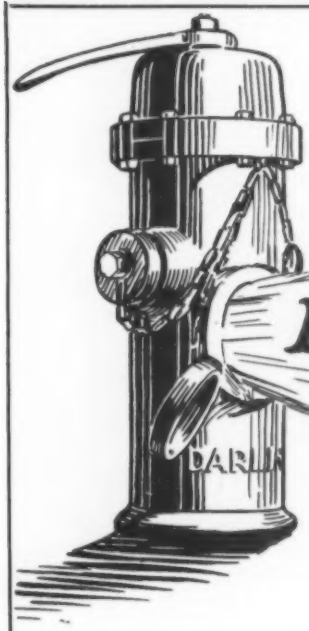


Delivers Full Pressure Instantly!

THE call for water is answered by a Darling Hydrant with a taut hose the instant the wrench is applied. Its simple, sturdy mechanism never binds nor jams.

Darling's extra large barrel delivers all possible pressure; and, while sturdy enough to withstand most collisions, accidental breakage cannot possibly cause a flood, for the valve is located below ground and closes *with* the pressure.

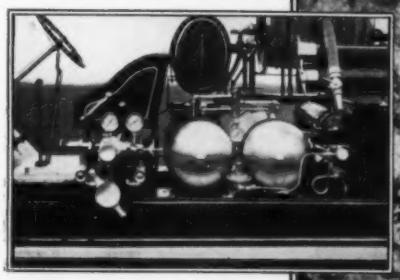
The little attention required by Darling Fire Hydrants is made easy by the fact that all valve mechanism is readily removed through the top—not through the pavement.

Complete data for Department Chiefs and Municipal Engineers will gladly be sent you on request.

DARLING VALVE & MFG. COMPANY
WILLIAMSPORT, PA.
NEW YORK CHICAGO OKLAHOMA CITY HOUSTON

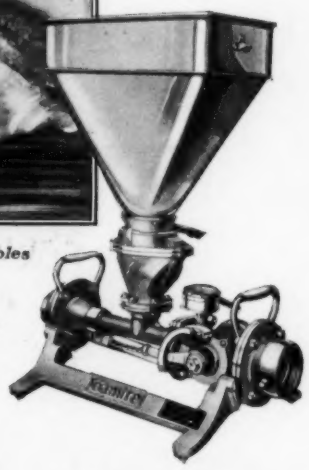
DARLING
FIRE HYDRANTS

THE MOST COMPLETE FIRE PROTECTION SERVICE IN AMERICA TODAY



Foamite 40-gal. chemical tanks mounted on motor apparatus in place of Soda-acid tanks. Each tank generates about 300 gallons of Firefoam

Firefoam—millions of tough, heat-resisting bubbles forming an airtight blanket that smothers fire of any kind



The Portable Foamite Foam Generator, which connects into any hose line and produces high quality foam by the mixture of Foam Generator Powder and flowing water. Extremely convenient to carry on apparatus, and takes only a few minutes to set up for operation

Why this specialized equipment is *indispensable* today

FIRES of oil, gasoline, chemicals, paint, are on the increase everywhere. Treacherous in the extreme, they can seldom be controlled by water alone—and frequently they defy liquid chemicals.

But more than 900 Fire Departments are now successfully coping with this problem by the use of *Foamite* equipment, which generates fire-smothering Firefoam.

Clinging to any surface—floating on liquids—resisting fierce heat—Firefoam forms an airtight "blanket" which kills fire and insulates against reflash. *No flooding or dripping to damage property!*

Several highly efficient forms of *Foamite* equipment are shown on this page. We shall be glad to send you complete information on request.

Foamite-Childs Corporation, Fire Protection Engineers and Manufacturers, 366 Turner Street, Utica, New York. Sales and Engineering Representatives in all leading cities. *Foamite-Childs of Canada, Ltd., Toronto, Ontario.*

The 2½-gal. Foamite Model F D Extinguisher — produces over 20 gallons of Firefoam. Used today by more than 900 Fire Departments

Foamite-Childs Protection

A Complete Engineering Service

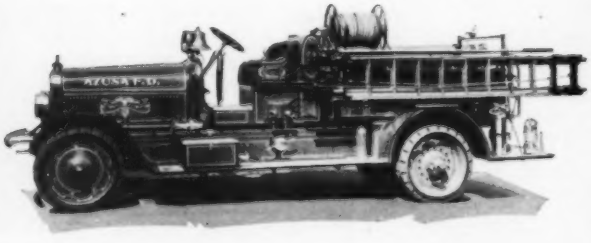
Against Fire

Kelly Kats will carry you anywhere

No matter if you have to go "across lots" to get to a fire, Kelly Kats will carry your truck through just as long as the engine passes back enough power to turn the wheels. No matter how rough the going, no matter how deep the mud or how soft the sand, Kelly Kats will take you there.

And on paved streets the same side vents that take hold of mud and sand, grip the road and prevent skidding. On any road Kelly Kats are sure-footed and safe and can be relied upon to carry your apparatus through no matter what the conditions.

KELLY-SPRINGFIELD TIRE CO.
250 West 57th Street, New York, N. Y.



Fire engines that may be called upon to travel bad roads are insured against unnecessary delay if they are equipped with Kelly Kats.

KELLY KATS
THE TIRES WITH NINE LIVES

Ready Now!

for Delivery
for Demonstration
for Comparative Tests

THE NEW STERLING CODE-BLOWING SIREN

The Only Siren Designed Solely for Blowing Code Fire Alarm Signals

An entirely new development in electric fire alarm signals! Like the famous Sterling Model "M" in dependability and ability to be heard at great distances and as distinctive in tone—otherwise different.

The motor is designed and built for rapid acceleration. Operated by hand lever, by central station transmitter or from box system. Runs on any 220-v circuit. GUARANTEED BEST in its field!

Your own box system is easily adapted for use with this new siren, or a Sterling box system may be economically installed. No batteries required, box operation on 110-v system.

The Newest Product of the Oldest Makers of Fire Alarm Signals in the Country. Write for Particulars.

THE STERLING SIREN FIRE ALARM CO., INC.

61 Allen Street
Rochester, New York

For Twenty-Five Years, Manufacturers of Fire Alarm Signals Exclusively

QUICK ACTION AVERTS BIG BLAZE

Prompt action in turning in an alarm of fire averted a serious blaze in the heart of the business district at 3.30 [illegible] of the sandwich shop at 932 Fifth st[illegible]. A police officer saw the flickering light through the doorway, and ran to the alarm box at Fifth and Broadway, where he sent in the call. Firemen were on the scene a few minutes later [illegible] got into action with [illegible] hose lines, stopp[illegible] as it was about to get into a jewelry store on one side and through the wooden floor into the basement of the sandwich shop. Only a thin sheet of plaster was left between the shop and the adjacent store when the flames were finally quenched.

While the cause of the fire is undetermined as yet, firemen state that it apparently did not originate from the range, and the theory was advanced that a carelessly tossed cigarette may have been to blame. Damage is estimated at several hundred dollars, the kitchen being badly wrecked. Riggs & Christopher are proprietors of the shop.

The First Sand Cast Aluminum Box

Sand cast aluminum boxes were first manufactured by this Company some twenty years ago for the City of Milwaukee. This material was discarded shortly afterward as unsatisfactory for fire alarm boxes. Eight years later the Star Electric Company of Binghamton, N. Y., used this material but soon discarded it for the same reason. Samples of these boxes manufactured fifteen to twenty years ago are on exhibition in our museum.

Speed and Accuracy

Facilitate the transmission of fire alarms and what is the result—a minimized fire loss. By replacing *delay* and *confusion* with *speed* and *accuracy,* the result is simply a natural one.

The fire alarm box does this. It directs the fire fighting apparatus to the scene of the fire in the quickest time possible. The newspaper clipping reproduced above clearly outlines the benefits to be derived from a modern fire alarm system.

An analysis of the fire losses of any city equipped with good fire alarm protection will invariably show that box alarms are the safe alarms where life and property is at stake.

The Gamewell Company

Newton Upper Falls, Mass.

"A Box A Block"

FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Journal of the Fire Protection Profession

VOLUME LXXX APRIL 6, 1927 NUMBER 7

How Salvage Work Is Done

Explanation of the Means and Methods Employed by the Chicago Fire Patrol

By FRANK C. McAULIFFE, Chief of Patrols, Chicago Fire Insurance Patrol.

IN the February 23 issue of FIRE ENGINEERING *there was published an article by Chief McAuliffe entitled "The Latest—A Fire Patrol School," in which he described the workings and methods of instruction of the institution. This has attracted so much attention and so many inquiries have been received asking for further particulars as to the drills and instructions of the company school of the Patrol that Chief McAuliffe has written further on the subject in the following article:*

I have received so many questions in regard to that portion of my article describing the "Drills and Instructions for the Company School" of the Chicago Fire Patrol, that I have determined to explain these items in detail, in the hope that this will assist those interested. These inquiries seem to center upon items Nos. 1, 2, 3, 4, 5, 7, 8, 9, and 12 of this list and I will therefore confine my explanations to those particular features of the drills and instruction, taking each of these sections in order, first repeating the item from the previous article.

Explanations of the Items—No. 1

1. Proper methods of making catch-alls. How to be governed in whether or not such a procedure is necessary.

It is the object of the patrol to hold water to the upper floors insofar as it is possible.

In order to perform this work catch-alls are spread on the floor immediately below the fire floor. In other words, covers are spread over the floor and the edges rolled to hold the water. Where large quantities of water come through, catch-alls are built up around the edges by nailing to mop boards or by placing boxes, chairs or other objects that might be found at the fire, to build up the edges of the cover. This way it is possible to hold large amounts of water to the upper floors.

An officer in charge of a fire patrol has orders to go to the fire floor to determine the extent of the fire, the exact position of the fire, and to start his work immediately below this point. If, in his judgment, he decides that one or two engine streams can easily extinguish the fire in a short period of time, the floor immediately below is arranged for catch-alls. On the other hand, if it is necessary to use heavy streams, the officers in charge will order all goods covered to the basement.

Item No. 2

2. Covering goods on counters, tables, etc., method of rolling edges to prevent water running under covers when more than one cover is necessary to complete the work. Importance of clean covers. How to cover delicate fabrics and materials easily soiled. Prevention of water damage to bottom of dresses in racks or other materials close to the floor when sweeping water.

In covering goods on counters and tables it is necessary, where more than one cover is used, to roll the edge to prevent water from running into the lap of the two covers.

In covering glass show-cases it is necessary to place some object on the show-case, in order to warn truckmen and patrolmen from climbing on them in the performance of their work. Covers apparently clean can create a soilage damage to delicate fabrics, such as silk dresses in a rack.

For this reason covers should not be pulled across material, but carefully handled and dropped down over the material without drawing the cover across the stock unnecessarily. In the case of exceptionally delicate material, where it is possible to obtain wrapping paper and the time allows such a procedure, patrolmen are instructed to use a covering of paper under the regular salvage cover. Officers are instructed to scrub all covers returning from fires, and to keep them free from dust while in the rack.

In sweeping water through aisles officers must determine whether or not such sweeping may throw water on materials in shelves or hangings low on racks, and be governed accordingly.

Item No. 3

3. Drill in covering shelves. Pulling stock from walls to prevent damage caused by water following the wall. Care to prevent injuries to men performing shelf work. Method of catching water following vertical pipe openings.

The covering of shelving is a rather difficult problem in our service, due to the fact that the shelves are constructed without a backing. Goods are piled in the shelves directly against the walls, in which event water traveling down the walls will ruin the material in spite of the fact that the shelf may be properly covered. Also stock is frequently piled on top of shelves in such a manner that it must be removed before the shelf can be properly covered. When on inspection trips our officers watch this item closely and recommend to owners a shelf with a backing of wire mesh, and a small space at the top to allow patrolmen to pull the cover down over the back of the case.

Patrolmen are frequently injured by falling from shelves which break under their weight, or in such positions where their foothold is insecure. For this reason officers are instructed to use care and good judgment in sending them to tops of shelving.

Water following vertical pipes is caught by wrapping a cover around the pipe and tying with twine, which is part of a patrolman's equipment.

Item No. 4

4. Drill in covering large stocks in piles. Proper laps to make arrangement of pitch. Arrange stock to be covered using the least number of covers possible to perform proper coverage. Explain the difference in the width and length of covers and how to use to the best advantage. How to open the cover to spread in the width or length.

When covering large stocks in piles the first cover is drawn from the floor up, and the second cover spread from that point back, giving the proper lap to prevent water running from the top cover underneath and onto the stock. Frequently stock can be arranged quickly to allow coverage with one cover. Also an officer should know from his experience and training exactly how many covers will be required to cover any particular stock or pile of stock, and be governed accordingly. One cover spread lengthwise may not cover, whereas if it had been spread in the width the cover might easily complete the work.

Our school aims to arrange different set-ups to test the officers' judgment in this matter. Covers are opened by securing certain ends, to open in the width or length and to prevent dropping the inside of the cover in water that may be on the floor.

Item No. 5

5. How to cover belt driven machinery. Importance of covering elevator machinery located in the basements, when sweeping water down elevator shafts. Methods of draining water from basement. Use of gasoline pumps for elevator and boiler pits not equipped with drains.

In covering belt-driven machinery it is important to wrap the cover around the belt in such a manner to prevent water following the belt and damaging the machinery. If it is possible to remove the belt this is done.

At one time instructions were given to cut belts when covering machinery. This has been discontinued except in extreme

emergencies. When it is necessary to cut belts, officers will note the manner in which the belt is laced. If raw hide is used it is merely necessary to cut the lacing. Where steel lacing is used the belt is cut a distance of about three feet from lacing. Our men are instructed to cover elevator machinery when such machinery is located in the basement, and it is necessary to sweep water down an elevator shaft.

Water is drained from basements by opening catch basins and drains, which are marked on inspection trips by "drain" cards hung from the ceiling. Fire department engines pump basements until they can draft no longer, after which we have a small portable pump to complete the work and draft water from elevator pits and other places not accessible to fire department pumpers.

Item No. 7

7. Instruction and drill in covering household furniture. Handling of rugs, pictures, drapes, curtains, clothing in closets and other hangings. Proper method of bunching furniture before covering.

Household furniture presents a very similar condition in almost every class of dwelling and apartment building. For this reason special instructions are given to standardize the work of bunching household furniture before covering. Rugs are rolled and taken from the floor, placed upon tables or beds. Pictures, drapes and the contents of clothes-closets are removed and placed in a position convenient for covering. In covering a bedroom we find the room rather small to work in and swinging glasses on dressers, etc., often knock down breakable articles that may be on the tops of dressers. These articles are gathered and placed in the upper drawer. Dressers are backed up against the top end of the beds, and in this manner one cover will generally perform the covering necessary in an ordinary bedroom.

Items No. 8 and 17

8. Care of covers at fires:
   1. Thowing covers from windows down elevator shafts, etc.
   2. Spreading catch-alls over glass or other debris and walking in covers unnecessarily.
   3. Using grommets when nailing stock covers.
   4. Bailing catch-alls with wood scoops to prevent tears.
   5. Spreading covers under dropping fire or in places where they may be burned.
17. Care of covers in quarters. Drill in patching and mending rubber and canvass. Instructions in washing, drying and general care to prevent deterioration.

Covers represent one of the large items of expense in maintenance of the patrols. Officers should therefore practice strict economy in their use, make careful repairs and keep proper records in order to reduce this expense to a minimum.

They should be thoroughly washed and dried before being placed in service. Officers of companies will be held responsible for mildew or unclean covers.

Officers shall see that covers are carefully examined for cuts and tears when being removed from racks.

Officers shall instruct men in making the proper repairs and carefully examine all such work before repaired covers are placed in service.

Care should be exercised at fires to avoid unnecessary tears due to pulling covers over sharp projections. Covers should be removed from floors and stairways as soon as possible and walking over covers unnecessarily is strictly forbidden. Covers shall not be thrown down elevator shafts or from windows when removing them from buildings. Wood shovels shall be used to bale catch-alls. Nailing of stock covers except in grommet holes is strictly forbidden. Covers should never be spread on a floor or sidewalk over broken glass or other sharp pieces of debris.

Covers shall not be allowed to remain on apparatus more than two weeks. Covers in stock shall be refolded according to weather and judgment of the Captain, and in no case shall a cover remain in stock for a longer period than one month without refolding.

When rubber covers are not used for one month they shall be hung in the racks, showered and dried before replacing in stock.

Care should be taken in covering roofs. All nails, sharp or ragged tin or any other material likely to perforate or tear the covers should be removed before the covers are placed in position. Covers must be securely fastened to prevent them from flapping.

Item No. 9

9. Building chutes—Improvised and standard equipment. When and how to use.

Where large amounts of water are present on upper floors, and it is necessary to sweep long distances to elevator shafts, a hole is cut in the floor near a window and a chute, that we carry as part of our equipment, is placed under this hole and extended through the window on the lower floor. In this manner water is diverted to the outside of the building. Where a great number of chutes are required they are built at the fire out of material that may be found on the premises together with our regular covers.

Item No. 12

12. Covering roofs—Flat roofs, gable roofs and skylights. Instruction in raising roofing material, manner of fastening covers and properly pitching to drain.

The covering of roofs constitutes a very important part of our service, as it is useless to salvage a stock of goods from fire and allow the elements to destroy it.

When truck companies open up flat roofs it is important to note the pitch of the roof and to raise the tar paper to sufficient height above the roof boards to prevent water, following the pitch of the roof, from entering underneath covers that are spread over the opening. In raising the tar paper we use a special tool so as not to break it, and place small pieces of wood between tar paper and roof boards. In making repairs to gable roofs the same precaution must be taken. Where the roof is of shingle construction, the first cover is placed at the bottom and the second cover is drawn to the top, making the proper lap and preventing water flowing into the opening.

In cases where it is impossible to cover the roof in this manner catch-alls are placed in the attic space and the water removed after rain. Instructions are given in fastening covers to prevent their being blown from the roof by drafts from the inside of the building or from the wind.

Fund Raised for Browning Memorial

A memorial fund is being raised as a testimonial to the late Chief Robert Browning, of Central Falls, R. I., who was killed while on duty at a fire in Pawtucket on November 20. The entire proceeds will be used for the benefit of the family of the late chief.

The officers in charge are as follows: Honorary Chairmen, Mayor J. Adelard St. George, of Central Falls, and Mayor Charles H. Holt, of Pawtucket; Honorary Vice-Chairmen, Chief Thomas Almond, of Central Falls, and Chief Charles H. Fuller, of Pawtucket; Active Chairman, Thomas Scholes, of Central Falls; Secretary, Arthur H. Pierce, of Pawtucket; and Treasurer, Everett E. Tripp, of Central Falls.

Among the contributions received are $100 from the New England Association of Fire Chiefs, $100 from the Fire Chiefs' Club of Massachusetts, and $25 from the Box 52 Association of Boston.

HARRY BELKNAP.

Going to Portland? Here is One of the Trips Planned

Those fortunate enough to make the trip to the convention of the International Association of Fire Chiefs at Portland, Ore., will have the opportunity of viewing the snow capped Mt. Hood. At the lower right is Bull Run Lake and Mt. Hood watershed. A trip is being planned for the delegates so that they will be able to make a complete circuit of the picturesque mountain at a very advantageous time of the year.

Protest Made Against Outside Work—An ordinance has been proposed by the Central Labor Union that would prohibit outside work by members of the Springfield, Mass., fire department while off duty.

A Fire Where Big Streams Were Needed

Failure to Employ Large Streams Responsible for Spread of Fire—Suggested Method of Handling Blaze

THE fire described in the last issue of this journal brought out very forcibly one lesson in fire control; the necessity of using large calibre streams for checking the spread of a fire of large proportions.

The sketch herewith shows quite clearly the buildings involved by the fire and also those immediately adjacent to the fire building. The fire started at the point marked X in the public garage in the southeast corner of the area.

The Fire Department

The fire department in the city in which this fire occurred consists of four engine companies all equipped with motor fire apparatus, four hose companies each equipped with combination chemical and hose trucks, and two truck companies.

In addition one tractor drawn steamer was held in reserve at headquarters and called only by special call.

The response to alarms was as follows: First alarm; Engine Co. No. 1, Hose Companies Nos. 1 and 2 and Truck Co. No. 1.

Second alarm; Engine Co. No. 2, Hose Co. No. 3, and Truck Co. No. 2.

Third alarm; Engine Co. Nos. 3 and 4, and Hose Co. No. 4.

Water supply in the vicinity of the fire was excellent, all hydrants being attached to mains 10 inches in diameter or larger.

Water pressure at all times, even during the height of the fire when there was a great draught on the system, was around 80 pounds (not 8 pounds as misprinted in the last issue of this journal).

The personnel of the department was somewhat light, only five men responding with each engine company and three men with each truck company; three men also responded with each hose company.

At the time the fire occurred, wind was blowing from the southeast at about 30 miles an hour. Weather was mild.

The Fire

The fire started in the garage at the point marked X about 3 o'clock in the morning. Due to injury of the only two men in attendance at the garage at the time the fire occurred, an alarm was not transmitted until the garage was fully ablaze and fire was threatening buildings to the rear and alongside the garage.

A box alarm was transmitted and the first alarm assignment including Engine Co. No. 1, Hose Companies Nos. 1 and 2 and Truck Co. No. 1 responded.

At the time of the arrival of the apparatus the flames were sweeping up the face of the five story building overlooking the garage and were also being carried by the wind toward the lumber piles at the northwest corner of the public garage.

Suggested Method of Handling Fire

The greatest danger from the fire at the time the first alarm assignment arrived was the possibility of the fire spreading to the lumber piles and the lumber storage shed immediately across the alley to the rear of the garage. These buildings must be covered at once as well as the five story building alongside the public garage.

One and one-half-inch streams are unsatisfactory where a 30-mile breeze is blowing and where a considerable range is desired. For this reason the first engine company instead of stretching in two single lines in an endeavor to control the garage fire, should have stretched two lines to a 1½-inch nozzle, to be used in connection with a play pipe holder, and the stream directed up the alley from the Capitol Avenue side to cover the lumber piles and lumber storage shed.

At this point it may be mentioned that the transmission of the second alarm instantly was good practice on the part of the commanding officer in charge of the first alarm assignment. The additional apparatus was certainly needed and the elimination of delay in calling it showed very good judgment.

Hose companies No. 1 and 2 depending solely upon the hydrant pressure which is in the neighborhood of 80 pounds, would not be able to make use of large streams. Instead, they should stretch single lines (Hose Co. No. 2 from hydrant No. 8, and Hose Co. No. 1 from hydrant No. 4) to the Wilbur Street and Capitol Avenue entrances to the garage. 1⅛-inch nozzles would be the largest which could be satisfactorily accommodated by hydrant streams through the stretches of hose necessary in each case.

Assignment of Second Alarm Apparatus

Engine Co. No. 2 of the second alarm assignment should be stationed at hydrant No. 7 and two lines stretched in along Wilbur Street to a 1½-inch nozzle which is to cover the five story building.

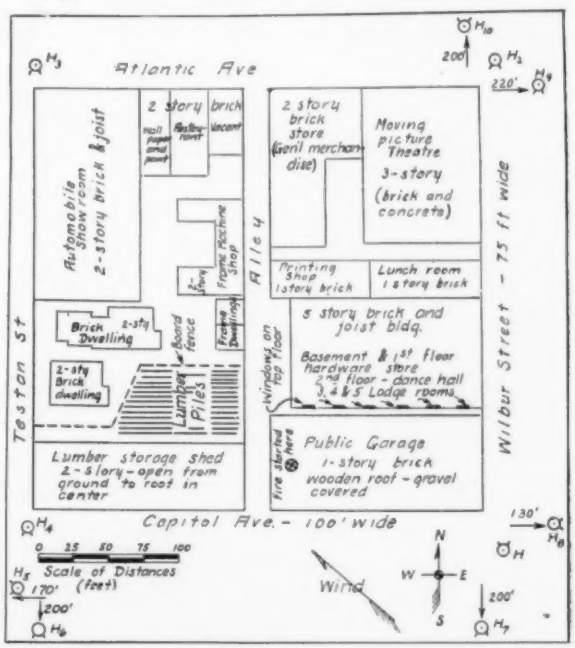
This large stream can also be operated into the garage to kill the main body of the fire, if possible, and in the period intervening be operated so as to cover the windows of the five story building.

Hose Co. No. 3 may be placed at hydrant No. 3 and a single line stretched in to assist in covering the lumber piles if they appear to be exposed.

Otherwise it may be stretched to the second floor of the lumber shed or to the first floor in such a manner as to cover the upper tiers of lumber and prevent fire from entering this building.

In case of necessity the hydrant line stretched from hydrant No. 5 may be employed in covering the lumber shed as well.

Truck Cos. No. 1 and 2 may be utilized in stretching the lines


Atlantic Ave
2 story brick
2 story brick store (genl merchandise)
Moving picture Theatre 3-story (brick and concrete)
Automobile Showroom 2-story brick & joist
Printing Shop 1 story brick
Lunch room 1 story brick
Alley
Teston St.
Wilbur Street - 75 ft wide
5 story brick and joist bldg.
Basement & 1st floor hardware store 2nd floor - dance hall 3, 4 & 5 Lodge rooms
Brick Dwelling
2-sty Brick dwelling
Lumber Piles
Lumber storage shed 2-story - open from ground to roof in center
Public Garage 1-story brick wooden roof - gravel covered
Fire started here
Capitol Ave. - 100' wide
Scale of Distances (Feet)
Wind
N
W
E
S

and also in going through the 5 story brick building adjacent to the public garage to make sure that fire is not entering this building.

In the event that fire enters the building, it will be necessary to stretch lines up to cover the exposed portions.

The lines from hose Co. No. 1 will be available for this purpose.

Calling Additional Help

If upon the response of the second alarm assignment and getting this assignment in operation, there is any question whatsoever as to the ability of the second alarm assignment to hold the fire, no time should be lost but a third alarm transmitted at once.

Assuming that a third alarm is necessary and that such is transmitted, the assignment of lines from the third alarm companies will be as follows:

Engine Co. No. 3 at hydrant No. 5 and two lines stretched by ladder to top of lumber shed, these two lines to be used in a single 1½ inch nozzle with a pipe holder and so directed as to cover lumber piles and a portion of the five story building overlooking the public garage.

Engine Co. No. 4 to be placed at hydrant No. 9 and a single

line stretched through the alley to the rear of the five story building. This line to operate in covering the rear of the five story building as well as assist in covering the lumber piles.

If the fire is not spreading or if the lumber piles or storage shed are no longed endangered, this line may be brought up at closer range to operate on the public garage.

Engine Co. No. 4 stretch in a second line from hydrant No. 4, this second line operating to assist the first line from this engine.

It is very likely that this assignment of lines, which should first cover the serious exposure and subsequently close in on the fire, will be able to confine the blaze to the public garage. The great area of the public garage, it being approximately 150 feet in length and 75 feet wide made operation of the department on the fire within the garage a difficult matter. The fact that the fire is through the roof when the department arrived makes necessary the directing of attention toward covering exposure first, and secondly the extinguishment of the fire.

Drill Tower Erected in Murphysboro

On his way from the meeting of the Board of directors of the International Association of Fire Chiefs in Portland, Ore., Chief Albert Herring of Murphysboro, Ill., stopped off at Los Angeles, Cal., to visit Chief Ralph Scott. Chief Scott showed his guest the training school and while there Chief Herring was impressed with the necessity for the erection of a drill tower in his town.

Murphysboro Drill Tower

The material for the tower that was later erected in Murphysboro was donated by merchants in the city. Several carpenters donated their time, and with the assistance of the fire department the drill tower was completed in two days.

Canadian Firemen Ask City Aid

A law that all traffic must stop upon the sight of fire apparatus has been asked by the firemen attending the British Columbia Fire Fighters' Association, and a letter asking for the suggested legislation has been sent to the various municipalities. Regulations of street traffic to insure the safety of the firemen as well as the citizens was the subject of another resolution.

Incities which have laws requiring traffic to stop upon hearing the approach of fire apparatus, the motorist has often avoided severe penalties by claiming that he did not hear the siren on the apparatus. The suggested law will do away with the loophole for the motorist.

Outside Service Pays for Apparatus

Pumps of 400-gallon capacity have been installed on the trucks of apparatus in Albion, N. Y., and the work done without any cost to the taxpayers. In fact, the firemen have a plan whereby the cost of the improvement is borne by the service rendered to neighboring towns.

Contracts exist between the village of Albion and the townships of Albion, Barre and Gaines for Albion to furnish fire protection service at all times. A charge of $50 is made for a run within the three-mile limit and an extra charge of $3 for each additional mile one way. Last year the revenue was $770 and none of the towns found it necessary to assess the property more than seven cents per thousand valuation for fire protection.

RUSSELL J. WALDO.

Schenectady, N. Y., Plans for Central Fire Station—Twenty-two bids have been received for the erection of a central fire station in Schenectady, N. Y. The station which is to be constructed of brick will be three stories high.

New Apparatus Asked for Canton, O.

In his annual report, Chief R. O. Mesnar of Canton, Ohio, calls the attention of the city council to the fact that he has repeatedly asked for new apparatus without any action being taken. He recommends that something be done quickly. One of the pieces has been in continuous service since 1912, and it is impossible to get repair parts for some of the apparatus now in use. Chief Mesnar suggests in order to acquire the new apparatus without any great financial burden on the city that a new piece of apparatus be purchased every six months to replace some of the more worn units.

His report to the council is most comprehensive and includes the various phases of the fire prevention problem.

Chief R. O. Mesnar
Canton, Ohio

Bill Aimed at Firetraps

A bill has been prepared to add a section to the Tenement House Law of New York city in an attempt to do away with the firetrap apartments. The proposed section reads as follows:

In every non-fireproof tenement house erected prior to April twelfth, nineteen hundred and one, exceeding three stories and basement in height and provided with an inside cellar stair, communicating between the entrance story and the cellar, or other lowest story, the opening to such cellar stair, if located underneath the main stairs leading to the upper stories, shall be enclosed from the level of the entrance floor up to the underside of the first flight of stairs. The soffit of such first flight of stairs and the partitions forming such enclosure shall be fireproof or be lathed with metal lath and plastered with two coats of cement mortar of good materials or shall be covered with twenty-six gauge metal. All doors to such enclosure shall be self-closing fireproof doors. In all tenement houses, erected prior to April twelfth, nineteen hundred and one, all doors opening on the first floor entrance hall shall be made fireproof and self-closing.

"His Honor" Will Rogers Inspects the Fire Department

Returning for awhile to Beverly Hills, Cal., Mayor Will Rogers, perhaps better known for his witty remarks on the stage, attempted to make up for lost time by inspecting the fire department. Before a meeting of many of his townspeople he said that he did more mayoring in a day than most of the politicians could do in a month and he recommended that politicians should do more traveling. With Will Rogers is Chief Lloyd Canfield.

A New Extinguisher For Special Hazards

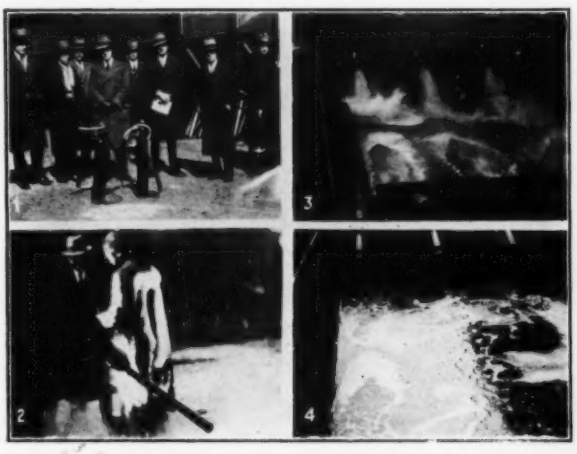
Employs Liquified Carbon Dioxide Gas—Description of Tests to Which It Was Submitted

THERE are three recognized methods of extinguishing fire, and which are employed to a greater or less extent in fire fighting. They are:

1. Cooling the burning materials below ignition point.
2. Smothering the fire by eliminating oxygen necessary to support combustion.
3. "Snuffing out" fire.

In many cases two of the methods are combined in one operation.

The most common method of extinguishing fire is by cooling off materials to a point below ignition, or reignition point. Thus



Snapshots at the Test

1. Some of the Visitors Behind Two of the Extinguishers Just Before the Test. 2. One of the Demonstrators After Having Received a Coating of Carbon Dioxide Snow from an Extinguisher. 3. Dip Tank Just After Fire Was Brought Under Control. Note Gas and "Snow" Entering Dip Tank from Nozzles at Rear. 4. After the Fire Was Out. Notice the Ice and Carbon Dioxide Snow on the Surface of the Oil. The Snow Was So Intensely Cold That It Froze a Thin Sheet of Ice in the Tank Wherever It Came in Contact With Water.

when water is used on a fire its chief function is to cool down the fire.

This is accomplished by wetting the burning material, such wetting resulting in the absorption of heat from the burning materials and the reduction of the temperature thereby. When water is thrown on a fire the water itself does not do all of the reducing of the temperature while in the liquid state. Instead, some of the water is vaporized and in becoming vaporized it absorbs the heat necessary for vaporization from the burning materials. Thus the temperature is reduced both by the heating of the water and the vaporization of it.

The second method of extinguishing fire, by smothering it, is commonly employed in cases where inflammable oils are afire. Foam, such as is commonly used for extinguishing oil fires, extinguishes by the smothering method. Although it may have a slight cooling effect, this effect is secondary to the smothering effect.

The surface of a burning body of oil, covered by such foam, is not accessible to oxygen necessary to support combustion and the result is the extinguishment of the fire.

Water, too, may have some effect on extinguishing fire by smothering, but this effect is minor compared to the cooling process.

Carbon tetrachloride extinguishers extinguish fire by the smothering effect, the gases given off upon vaporization of the carbon tetrachloride being of such a nature such as not to support combustion.

With a soda and acid extinguisher there is a small amount of smothering effect but the chief extinguishing power is due to the cooling effect of the fluid from the extinguisher.

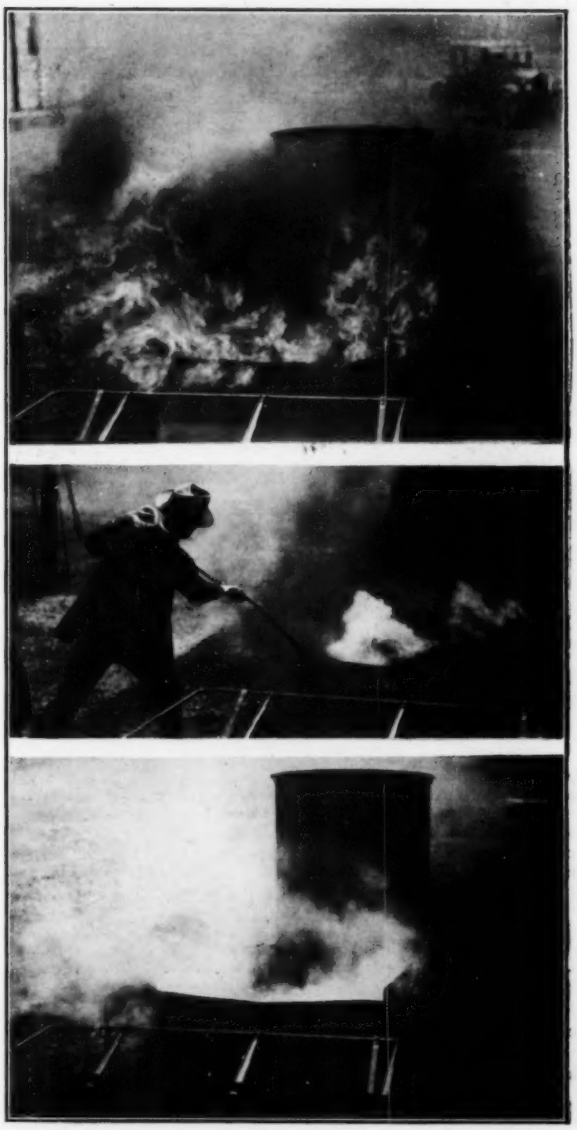
"Snuffing out" fires is accomplished by concussion, such as from a strong, sharp blast of air, or from the detonation of explosives. This method of extinguishing fires is rarely employed.

The New Extinguisher

There has recently been developed by the General Carbonic Company, of New York, a portable type of extinguisher which operates on a comparatively new principle.

The extinguisher is in the form of a steel cylinder fitted with a short piece of hose having a funnel type of nozzle. The steel cylinder is filled with liquified carbon dioxide gas, under a pressure of around 1,000 pounds per square inch.

The extinguisher is operated by turning a hand valve which releases the gas into the hose and through the nozzle. Contrary to what might be the first impression, this extinguisher does not function solely by smothering fire. The release of the gas to the atmosphere (the expansion taking place from 1,000 pounds to approximately 15 pounds atmospheric pressure) so



First Test: Extinguishing the Fire in a Tray of Oil

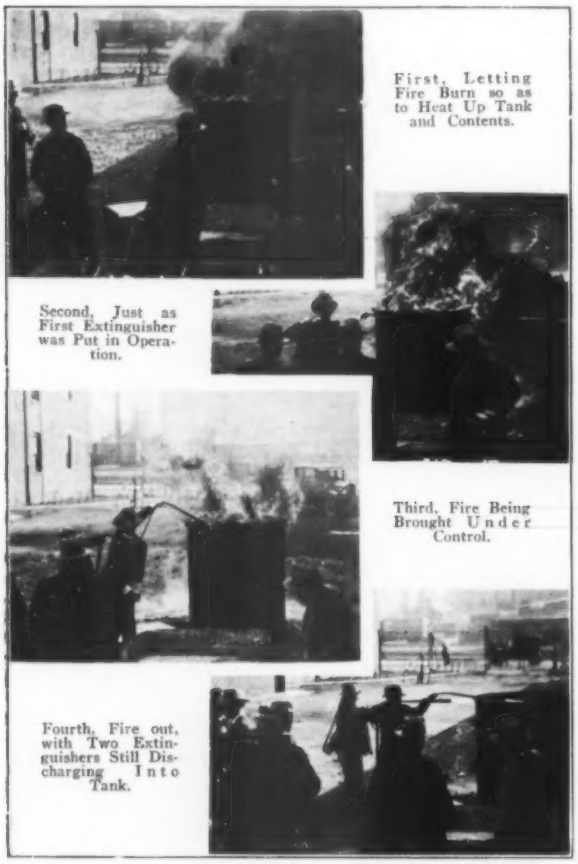
Top, Just as the Signal Was Given to Use the Extinguisher
Center, Three Seconds After the Gas Was Turned On
Bottom, Six Seconds After the Extinguisher Was Opened—Fire Completely Out in the Tank

chills the gas that part of it solidifies. The result is a snow of intense coldness. This snow, instead of melting as does ordinary snow, changes directly from the snow form (solid form) into gas. This vaporization process, which is termed sublimation, absorbs heat in great quantities from the burning material with a result the temperature of the burning material is lowered. If it is sufficiently lowered, the fire ceases to burn.

The chief fire extinguishing effect, however, is due to the presence of carbon dioxide gas discharge as gas from the extinguisher and created by the vaporization of the "snow."

It will be noted from the above that this carbon dioxide extinguisher differs widely in its method of operation from other types of extinguishing agents.

Its greatest extinguishing effect is from smothering by the carbon dioxide gas which it discharges, and the secondary extinguishing effect is due to the cooling effect which it produces.


First, Letting Fire Burn so as to Heat Up Tank and Contents.
Second, Just as First Extinguisher was Put in Operation.
Third, Fire Being Brought Under Control.
Fourth, Fire out, with Two Extinguishers Still Discharging Into Tank.

The Test That Required the Most of the Extinguisher

Although the Carbon Dioxide Extinguisher will Project a Stream of Gas and Snow Approximately 20 Feet, It was Used at Close Range in All of the Tests Where Possible.

Tests Conducted

Tests were conducted of this extinguisher on March 23 at the Long Island City plant of the General Carbonic Company.

The principal tests were four in number.

They will be described in the order in which they were carried out.

The first demonstration was the extinguishing of a fire in a metal tray 4½ ft. x 4½ ft.

The tray was partly filled with water and approximately 10 gallons of oil and gasoline were placed thereon.

The fire was permitted to burn about two minutes when one of the hand type carbon dioxide extinguishers was put in operation. It took but six seconds to completely extinguish the fire.

Other types of extinguishers available were also employed in this demonstration to show the relative speed in extinguishing the blaze. The carbon dioxide extinguisher proved much quicker in this test, requiring but a fraction of the time of that necessary with the other extinguishers to put the fire out.

Pictures of this test are shown elsewhere on this page.

The second test was with a dip tank arrangement having six nozzles connected to a battery of carbon dioxide cylinders. This dip tank was approximately 5½ x 9 feet in size and contained, on a base of water, approximately 5 gallons of kerosene and gasoline. The fire was lighted and permitted to burn approximately one minute when the gas was turned on. It took three seconds to kill all fire except that in the corners; in ten seconds the fire was completely out.

Third Test

The third test was a far more trying one and would seem to indicate the limit of the capabilities of the carbon dioxide extinguisher.

This tank which was cylindrical in form, was 4½ feet in diameter and 5 feet deep. It contained approximately 4 barrels of gasoline and kerosene. The fire was lighted and permitted to burn about 10 minutes before the extinguishers were put to use. By this time the tank was thoroughly hot to the ground, and fire was burning vigorously as shown by the illustrations elsewhere in this article.

It required approximately 2 minutes to extinguish this fire.

It was apparent that a large amount of the carbon dioxide gas was being carried out by the draught created by the fire so that greater dependence had to be placed upon the chilling effect of the carbon dioxide snow for stopping the fire. In this test five extinguishers were used, being applied in relay.

An Efficient Demonstration

The final demonstration consisted of extinguishing a sheet of fire approximately 30 feet long and between 3 and 4 feet wide made by the burning of 5 gallons of gasoline poured along a concrete floor. The speed with which the extinguisher put this fire out was remarkable. It required but 9½ seconds to complete the job. The gas, coming out fan shaped from the extinguisher, swept the fire before the operator as fast as he could walk.

In view of the great area covered by this fire—totalling approximately 100 square feet, this demonstration was commendable.

Summary

To sum up the results of the test, it appears that the carbon dioxide extinguisher is most effective in handling fires of large area such as in dip tanks, or in oil spread over floors, where a wide sweep of the extinguishing agent is needed. This was quite conclusively shown by tests Nos. 1, 2 and 4.

On the other hand where there is a great body of heat such as where the contents of an oil tank have been heated to a high temperature, due to continuous burning, the extinguisher is not quite as efficient. The vigorous draft breaks up the blanket of gas and the chilling effect of the carbon dioxide extinguisher is not sufficient to make quick work of the fire. Another demonstration, which would hardly be classed as test of the capability of the extinguisher, was the extinguishing of a small fire in a pan containing carbon disulphide.

Heretofore this liquid has been considered as creating a fire which is hardly extinguishable by ordinary means. The carbon dioxide gas extinguisher put the fire out with not quite the ease experienced in handling plain oil fires.

Nevertheless it demonstrated that it is capable of handling fires in this very troublesome liquid, and may be expected to handle fires in alcohol in the same manner.

All in all, this extinguisher has a place in the fire service and future developments may show a widespread use of the principle employed in it. The fact that neither the gas nor the carbon dioxide snow is a conductor of electricity, as well as the fact that the gas is harmless, makes the extinguisher very desirable for use around electrical machinery or equipment where water would result in more damage than a promptly controlled fire.

Nyack, N. Y., Plans Fire School

Establishment of a fire school was planned at a meeting of the Rockland County Firemen's Association, and W. P. Babcock of Nyack, N. Y., has been appointed to see that the plan is put into concrete form. Chief Post of Haverstraw, N. Y., and Mr. Wiley have been appointed as assistants on the committee. At first the committee will be guided solely by the expense involved, but it is hoped to develop the school into something worth while.

Groveland, Mass., to Purchase Apparatus—Groveland, Mass., appropriated $6,500 for the purchase of fire apparatus.

Modern Fire Alarm Signalling

Planning an Industrial Fire Alarm Installation—Box Locations and Numbers

By E. W. KEIRSTEAD, E. E.

THIS, the twenty-third article on fire alarm subjects, concludes the series of articles by Mr. Keirstead on "Modern Fire Alarm Signalling."

Protection for Small Plants:

Every small establishment should have at least one standard type municipal box installed on their premises, as near to the main gate or entrance as is possible. This box should be connected to the city or town alarm system. This box should be assigned a special number to denote its location, and while it will have to be purchased by the firm owning the factory or building it should be maintained by the city fire alarm department and not by the companies employers.

Fig. 63. Industrial Type Fire Alarm Box

The private box protection can be increased by the uses of auxiliary pull stations which may be located on each floor. The pulling of this box will set the master box in operation and the alarm will be sent through to headquarters without leaving the building. Thus with a multiplicity of auxiliary boxes it is possible to send alarms from several points.

There are two systems which may be used to a good advantage in large and small plants, situated in the department service area: a system which will call the outside department whenever a box is pulled in the plant; a system which will call out the factory brigade when a box is pulled, leaving the calling of the cities forces to the plant fire chief through a manual means of operation.

With the first, it is simply necessary to pull the box in the building and then instruct the fire department as to the location of the fire upon their arrival.

In the other plan a city box is installed at the main gate, power house or office, where a watchman or engineer is constantly on duty. The watchman is instructed to await orders when an alarm is received over the plant system. There will be at least one city box installed at this point and upon the orders of the plant chief, the city box will be pulled, and the department directed to the scene of the fire. Where there are several entrances at the plant, it is well to have a box for each gate and have special numbers given to each box.

Where a plant is located away from the city department the latter system may be used to advantage, as it will be possible to organize a plant brigade, and provide for drills and tests to be made at intervals. Where this system is used the city box is to be used for alarm service only. The boxes used should be of the non-interfering type and be numbered properly in order to get the best possible use from them.

Type of Boxes, Location and Numbering:

When planning a layout for a system use enough boxes so that the floor area to be covered will not make it necessary to travel more than three hundred feet in any direction to reach a box. Have a box at each stair way or entrance, and have them placed so that it will not be necessary to travel away from a natural exit to reach a box. It will be necessary to take into consideration any special hazards that may exist. Have the boxes standard in their location, that is, in the same position on all floors, and have a list of the boxes posted over every box.

Care should be taken at all times to have the approach to a box clear of all obstructions and a red light should be provided at the location at night. Large plants should be well supplied with boxes and special attention should be given to railroad tracks, bridges, etc., to see that it will be possible to reach the box if the way is blocked by a train or the bridge is removed.

Boxes should be numbered according to floors and direction. For example with three number boxes, the first number is the location of the box, such as wing number, plant number or storehouse number. Where there are seven buildings in the property, allow the first number for each one of the buildings. The second number should be allotted to floor on which the box is located. The last or remaining number can be given as the box number. For instance box number 374 would be interpreted as a box located in building three and located on the seventh floor. In figure No. 63 is a type of industrial box.

Gongs and Sounding Devices:

The best type of gong to use in an industrial installation are electro-mechanical gongs. These gongs are placed directly in the box circuit, and are operated by the box itself. The only objection to these gongs is that they will have to be kept wound up at all times. They should be of a size large enough to give a good clear signal above all other noise. They should if possible be located directly over the alarm boxes.

The best type of gong to use is the turtle gong illustrated in Figure No. 64. It may be mounted on the wall or on a panel, and special care must be taken to make sure that the binding posts are upright as this gong depends upon gravity action to drop the hammer.

Switchboards and Battery Energy:

In all types of fire alarm work it is necessary to use duplicates sets of batteries—it is also true in industrial work. One set is charged on the working side of twenty-four hours and then the other bank or side is shifted into its place.

To control the system a storage battery controlling switchboard is used. It is equipped with the necessary switches, etc., for charging and controlling the batteries. These boards are made up in, one-, two-, four-, six and ten-circuit capacity. It is only possible to place twelve boxes on any one circuit, so if you have forty-eight boxes it will be necessary for you to get a four circuit board. There were two articles given on storage battery switchboards and it will be well to refer to them as much as possible when planning any type of industrial installation.

Fig. 64. Turtle Gong

If the factory has not direct current available, it will be necessary to have a motor generator set to charge the batteries. The size of the generator can be obtained by refering to article No. 23.

F. I. P. batteries are the best type to use as they were especially designed for fire alarm signal work and will give excellent service with a minimum amount of attention. Their capacity is 6-ampere hours and they are discharged at the rate of 1/10-ampere an hour. In twenty-four hours the rate of discharge will be 2.4 amperes.

Drills:

It is a simple matter of wiring to obtain the following results when a box is pulled for fire.

Call the public fire department.
Call the plant brigade to the location of the fire.
Sound the signal only in the building or place afire.
Sound the signal throughout all buildings and call the plant and city department.

The wiring plan may be arranged so that a drill may be had in any building at will, without calling the plant or city department.

Where building or floor drills are held, it is very important that the system be so arranged that if a box is pulled for an actual fire the drill feature will be automatically cut out and the alarm sent through. This is necessary in order to avoid confusion and delay.

When planning any installation it would be a good move on your part to call in the local alarm superintendent as he will no doubt be able to give you the benefit of his knowledge. He will be able, from past experience to offer many suggestions.

New Station Opened in Birmingham, Ala.—The first of the five new fire stations which are being built in Birmingham, Ala., has been officially placed in service.

Protecting Oil Tanks from Lightning

An improved method whereby huge oil storage tanks may be protected from lightning, one of the greatest present day hazards of the oil industry, was described by F. W. Peek, Jr., consulting engineer of the General Electric Company at Pittsfield, in a paper read before the annual convention of the American Petroleum Institute at Tulsa, Okla.

F. W. Peek, Jr., Consulting Engineer, General Electric Company.

From experiments made with artificial lightning of two million volts and miniature oil tanks, Mr. Peek has learned how oil storage reservoirs can be protected from both direct hits and induced voltages, which may come from a lightning flash striking at a distance. He found that a pole or conducting rod protects from lightning an area within a circumference four times its height. Placing a number of such poles around a miniature tank, Mr. Peek found that his artificial lightning either hit one of the poles or struck at a distance from the tank. He also found that by placing a wire net or screening over the top, extending slightly over the sides of his model, induced voltages which might cause sparks igniting explosive gases in the tank were prevented.

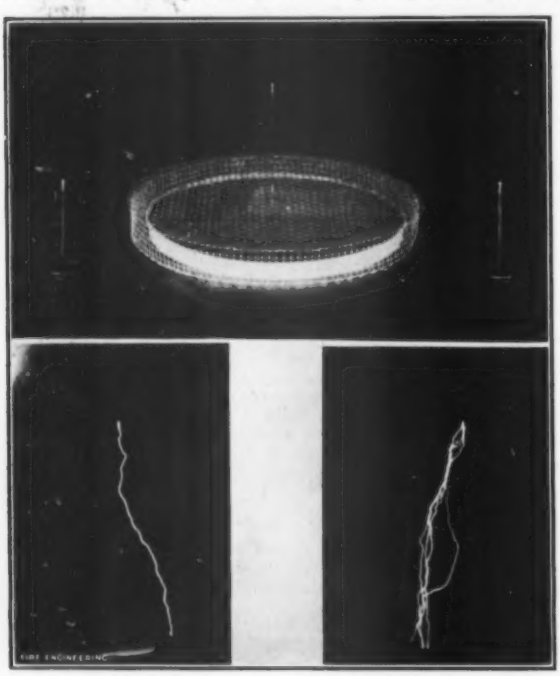
"My investigations have shown that the safest way, in fact the only way, to secure complete protection is with an all metal tank," Mr. Peek declared. "However, such tanks are not always economically feasible, and the next best protective scheme is the metal or wire-net roof over the top of the reservoir, used in combination with protective rods or poles placed about the tank. This arrangement is not as good as an all-metal tank, but the costs are much less."

Frequently, especially with certain kinds of oil, the space in the tanks between the top surface of the oil and the top of the tank becomes filled with gases or an explosive mixture of air and oil vapors. Where such gases can be kept out, the chance of induced lightning voltages causing trouble is small, Mr. Peek explained. "It may then be necessary only to protect the combustible top of the tank or the oil from direct hits," Mr. Peek said. "But where there are these explosive mixtures, the protection problem is more difficult and expensive. A spark at five hundred volts, caused by a lightning stroke miles away, could ignite such a mixture."

Because of the size of oil tanks, they are generally built of reinforced concrete and are frequently five hundred feet or more in diameter and thirty feet deep. Often as many as twenty-five or more of such tanks make up the so-called "tank farm."

Interior of High Voltage Laboratory at Pittsfield, Mass.

This is the laboratory where the tests were conducted and where the New England Association of Fire Chiefs witnessed some high voltage tests. Note the size of the men on the balcony in comparison with the size of the transformer.



Lightning Tests on Models of Oil Tanks

Upper—Miniature model of oil tank covered with metal screen, and with three lightning rods about the sides. The rods provide direct hits and the screen prevents induced voltages when the lightning strikes at a distance. Left—Artificial lightning striking one of the protecting rods. Right—Artificial lightning striking an unprotected oil tank.

Funds Provided for N. Y. Department

The Board of Estimate and Apportionment, City of New York, has set aside for the Fire Department's uses this year the sum of $950,000 for the following purposes:

Purchase of fire alarm boxes and appurtenances	$125,000 00
Site, construction and equipment of fire house in the Astoria section of the Borough of Queens	80,000 00
Site, construction and equipment of fire house in the Eastchester section of the Bronx	80,000 00
Acquisition of present quarters of Engine Company 301 and Hook and Ladder Company 150, 91st avenue and 197th street, Hollis, Borough of Queens and the acquisition of twenty feet of the adjoining lot	16,000 00
Site, construction and equipment of fire house to replace, the fire house at 160 Pierrepont street, Brooklyn	100,000 00
Site, construction and equipment of fire house in Great Kills section of Borough of Richmond	80,000 00
Concentrating subways leading to the new Central Office, Borough of Queens	150,000 00
Tie Cable from new Central Office to Rockaway, Borough of Queens	79,000 00
Modernizing Fire Alarm Telegraph System in the Greenpoint, Williamsburg, Bushwick, Eastern District and Ridgewod Sections of Brooklyn	170,000 00
Improvement of fire alarm telegraph system in Flatbush, Borough of Brooklyn	70,000 00

One of the stipulations is that the work must be started this year.

W. J. DALY.

New Rules of the New York Fire Department

This Eleventh Installment Covers Sections Dealing With the Keeping of Records and the Making of Reports

FOLLOWING is the eleventh installment of the "Rules and Regulations of the Uniformed Force of the Fire Department of the City of New York," just issued by that department, and which are to be published serially in their entirety in FIRE ENGINEERING. *This book has been compiled and edited by Captain John J. McCarthy, of H. & L. No. 43, detailed in charge of the Division of Public Assembly at Fire Headquarters, who worked under the personal supervision of Chief John Kenlon. This installment includes sections covering Records and the making of Reports:*

SERVICE RECORDS

SEC. 261. Commanding officers of companies shall keep an accurate record of all facts of service of the members of their commands other than Lieutenants, tending to show a degree of proficiency greater or less than the average. Chiefs of Battalion shall keep a similar record in relation to all Captains and Lieutenants in their respective battalions.

Any action performed by members of a degree of merit greater or less than the average discharge of duty would require shall be made the subject of an entry on the service records of the members concerned immediately. Every member shall have the right to inspect the record kept by his commanding officer concerning him during the first week of every quarter. Any member feeling himself aggrieved by any entry or omission in his record of service may file an appeal, in writing, with the Deputy Chief of his division, who shall render a written decision thereon. The papers on appeal shall then be forwarded to the Chief of Department.

When a member is transferred his service record shall be forwarded promptly to the Office of the Chief of Department for transmittal.

Officers through whom the said record sheets are forwarded shall, when necessary, enter in such spaces any comments they may deem desirable.

Reports

SEC. 262. Except when otherwise directed, all reports, applications and other official communications shall be addressed to the Chief of Department, be properly signed by the member with whom they originate, and the following instructions concerning them shall be strictly observed:

a. They shall be made on prescribed forms, when such are provided.
b. They shall be forwarded via intermediate officers in ascending order of rank or grade, which order shall be reversed when they are forwarded in descending order of rank or grade. This shall not be construed, however, as preventing any member from communicating directly with the Commissioner or Chief of Department.
c. They shall not be intercepted or delayed in transmission.
d. They shall be endorsed by each officer through whose hands they pass.
e. When the character of the endorsement is a disapproval, a brief explanation or statement of reasons shall be added.

SEC. 263. Members shall be held responsible for the accuracy and completeness of reports made by them. When a report is made on a subject for which no form is prescribed, it shall include all essential particulars, including dates, time, places, persons concerned, actions taken, and all other pertinent information in connection with any transaction or detail of Department business.

A negative report shall always be transmitted when there is no subject matter to forward at the time reports are required.

SEC. 264. Officers who make or forward reports may incorporate recommendations at their discretion. They shall incorporate recommendations when the nature of the subject so requires.

SEC. 265. Commanding officers of companies shall prepare and forward the following:

On the 3rd of each month: the calendar monthly reports of alarm boxes and keys; hose (in duplicate, giving registered numbers); condition of first aid bag; the monthly record; gasoline and oil received and expended; results of building inspections; time of fire duty performed by officers and officers' building inspection reports (addressed to Chief of Battalion); apparatus report; motion picture theatre reports and fuel reports.

On the 1st Monday of each quarter: Requisitions for supplies; names of members detailed, with dates when details became effective.

On the 1st day of March and October: The names of company chauffeurs and motor pump operators, in the order of their assignment to those duties.

Weekly, on Monday: The building inspection reports; reports of changes of residences and signatures, and of members appointed or transferred to the company; and requisitions.

Weekly, on Tuesday: Reports relating to occupancy notices.

On the 10th of each month: The hydrant reports.

On the 18th of each month: Reports of members elegible for advancement in grade during the following calendar month.

On the 20th of each month: Reports of defective standpipe and sprinkler systems.

Daily: Morning reports; theatre reports; violations, and other reports for which no routine arrangement can be devised.

Annually: Property returns and requisitions for coal, when possible.

SEC. 266. All accidents, collisions, etc., resulting in loss of life or serious injuries to persons, as well as all other extraordinary or unusual occurrences of any nature, in connection with the operations of the Department while proceeding to, working at, or returning from fires or alarms, shall be reported immediately by the Officer in direct control to the platform of the Telegraph Bureau for transmission to the Fire Commissioner and Chief of Department.

All occurrences not resulting in loss of life or serious injury happening in connection with or incidental to fire duty shall be reported by telephone to the Division Commander only, and shall be embraced in the report of operations at fires. All others shall be made the subject of a special written report.

Reports of the particulars of ambulance calls transmitted for accidents at fires or to members of the Department shall be prepared and forwarded promptly. For all other ambulance calls an entry in the Company Journal shall be sufficient.

SEC. 267. Officers receiving new apparatus, or apparatus from another officer (except spare apparatus placed temporarily in service) shall forward a report to the Chief of Department giving the following information:

Type and kind. Registered number. When and where built. When and from who received. Name of builder. Weight, Wheelbase and length over-all. Width. Size and name of motor; number and size of cylinders. Horsepower. Type of transmission. Description of pumps. Style, size in feet of longest ladder.

SEC. 268. Upon taking possession of new quarters, officers shall forward a report giving, when possible, the following information:

Location. When completed. Builder, height, stories and feet. Size of building. Size of plot. Materials built of—interior and exterior. On leased or city property. Location and capacity of gasoline tanks. Companies and special pieces of apparatus housed.

SEC. 269. Hydrant reports on the printed form shall be forwarded on the 10th of each month.

When hydrants are placed or removed, company commanders shall forward a report showing: Type and kind of hydrant; location, i. e., side of street, distance from corner and, where possible, a house number when a house is contigous to the site.

This report shall also state whether the new hydrant is supplied with water. If it is not, an additional report shall be forwarded when water is furnished.

SEC. 270. Complete details of hydrants needing repairs shall be forwarded to the nearest water supply repair station.

Breaks in water mains or hydrants shall be reported, by telephone, to the emergency branch of the water supply service in each borough respectively.

If repairs to hydrants are not made within a reasonable time, a written report to the Chief of Departments shall be made.

SEC. 271. Commanding officers shall forward written reports when inferior fuel is responsible for the ineffective steaming of boilers or the faulty operation of motors and mechanisms of apparatus.

SEC. 272. The Fire Record Journal shall be used for the purpose of entering therein the particulars of all fires or alarms for which reports of operations are forwarded.

The reports in this Journal shall be exact duplicates of reports forwarded.

SEC. 273. Commanding officers shall note upon the back of the morning reports the names of members of their companies to whom leaves of absence have been granted for any portion of the twenty-four hours beginning at the time designated for morning roll call on the day the report is made. Should it be

(*Continued on page* 343)

LOS ANGELES FIRE COLLEGE MAKES EXCELLENT PROGRESS

Courses Started for Engineers and Dynamite Corps Organized—180 Received Diplomas—Studies Well Planned

WITH the final lessons on building inspections, factory hazards, loft buildings, theatres, department stores, film studios and ship fires, the 1926 course of the Los Angeles, Cal., Fire College was brought to a close.

Officers attending the college took a final examination on all subjects covered by the course. The class originally consisted of 198 men, 172 being officers and the first twenty-six men on the eligible list for the appointment to the post of lieutenant. There were three promotions to the position of battalion chief, one death, three retired on pension, three resignations and eight failed to receive marks required for graduation —this left a class of 180 who received their diplomas. Captain John Home of Engine 27 had the highest average of the class.

On February 5, 1926, the mechanical course for the engineers and auto firemen was started with an enrollment of 258. This course is made up of eleven lessons. Lectures are given by Chief S. H. Dodd, Capt. W. W. Tebbets, Capt. J. L. Gowell, Master Mechanic E. Henry, and Electrician Carl Klemp on the following subjects:

Care and Maintenance of Apparatus
Construction and Operation of the Motor.
Carburetion and Cooling of the Motor.
Care of Batteries and Tungar Chargers.
Ignition, Starters, Generators and Lights.
Proper Lubrication.
Pumps.
Chassis.
Water Supply and Hydrants.
Proper Laying of Lines and Care of Hose.
Mental Calculation and Proper Pressure at Fires.

A course in hydraulics was also given by W. P. Gilbert, a high school professor assigned to the Fire College through the courtesy of the Los Angeles City Board of Education.

All lectures were illustrated by cut models of engines, pumps, batteries, generators, carburetors, magnetos, fire hydrants, and hose; also by lantern slides and cuts. At a later date, the class will be given practical work on the different makes of apparatus used in the department.

The work of the fire college was greatly aided by the various apparatus and equipment manufacturers, who kindly installed different models of their apparatus and equipment. During the coming years the instruction in the college will be continued until all members of the fire department have received instruction covering their respective positions.

In November, a dynamite corps of sixty men was organized, thirty men being assigned from each of the two divisions, under the instruction of Battalion Chief W. H. Augustine and O. B. Lewis. Lectures and field work were given by J. Costello and A. Diegan, experts from the Giant Powder Company. The dynamite corps was fortunate in getting real, practical experience in demolition work through the courtesy of a local concern in destroying a concrete dam and building in Sepulveda Canyon.

The courses are arranged along a progressive plan, and consider the various fire-fighting problems.

Fire Boat Equipped with Radio Telephone

The new fire boat which is being constructed for Seattle, Wash., will be equipped with wireless telephone equipment. There will be a permanent land station and a smaller unit will be placed on the fire boat. Frederick G. Simpson, radio engineer, designed the sets for the fire department. By this means the fire boat will be in constant communication with the land stations so that in case of smoke from a fire covering the water front, the marine fire-fighters will still be in touch with the land forces. Chief George M. Mantor of Seattle, Wash., is here shown with the set that will be placed on the fire boat now being built.

Fire Alarm Aids Yeggmen

Sounding four fire alarms from boxes in Brookline, Brighton and Back Bay, Mass., diverted the police to various sections of the district and enabled two yeggmen to stage two hold ups. Although the method of robbery is an old one, it was the first time that this scheme was tried in the eastern section of Massachusetts.

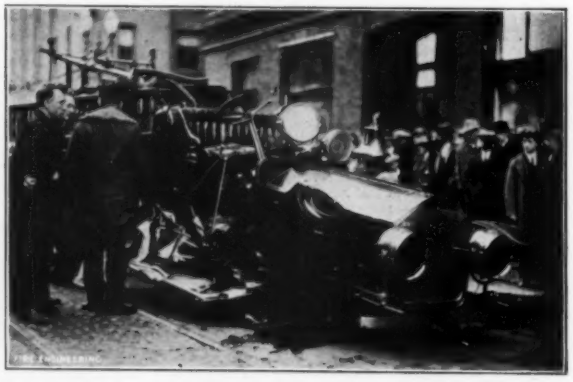
The robbers operated from a coupe. They drove through the town and held up various people who were out walking. Although two robberies were officially recorded, the police believe that there were more hold ups, but that the victims feared to report them because of the attendant publicity.

Film Exchanges Clean House

Hickman Price who has done a great amount of work along fire prevention lines for the motion picture industry, in an address before the National Fire Waste Council at Washington, D. C., explained how the various film exchanges and the industry in general cleaned house to safeguard the industry from fire.

Several years ago, fires in motion picture exchanges were common and fire chiefs were constantly apprehensive of a film exchange in their city becoming involved in fire. Now the exchanges have numerous fire walls and are thoroughly equipped with devices to protect the vertical and horizontal openings in the buildings against fire.

Many prominent fire prevention men spoke at the meeting commending the work of Mr. Price and the great good that he has accomplished.



What a Neglected Roast Caused in Portland, Ore.

A smoking roast of meat caused the injury of six firemen and the damage to both a fire engine and street car in Portland, Ore. As the fire company made the run in answer to the call to extinguish the blaze caused by the burning roast, the apparatus collided with a street car. Although the apparatus was badly damaged, none of the men was injured fatally.

Andover, Mass., to Purchase Pumper—Andover, Mass., will purchase a pumper at a cost not exceeding $15,000.

Providence, R. I., to Purchase Four Pumpers—Providence, R. I., will soon purchase four pumpers.

Whitman, Mass., to Purchase Apparatus—Whitman, Mass., is planning to purchase fire apparatus.

WITH THE EDITOR

Fire Schools For Volunteer Firemen

The principal reason why the volunteer fireman is not as capable a fire-fighter as his brother of the paid department, is because he does not obtain the practice and experience which a member of a paid department must have.

There is one way, however, by which this disadvantage can be very largely offset. It is by means of a fire department school. Such a school would, it is true, necessitate the men giving a little more of their leisure time to their fire department. But if there is a real desire to improve the department's efficiency there can be no complaint on this score.

Such a school would pay large dividends in the added efficiency of the department in handling fires. The knowledge of how to go about the extinguishment of all kinds of fires in the most scientific manner and that which will attain quick results with the minimum amount of damage to the building involved, is certainly worth any amount of time given up to the study of such methods.

The volunteer school should have able and experienced teachers, who are possessed of the faculty of imparting this knowledge to the men who they instruct. This latter is very important, and is a special gift which every teacher should possess.

Unless the volunteer department is a very large one, however, the school may not be feasible. To get capable instructors is always a difficult task, and unless funds are available for securing such talent instructors cannot be expected to serve regularly.

The Rockland County N. Y., Volunteer Firemen's Association is considering a plan by which the smallest department can take advantage of this plan through the formation of a school under the auspices of the association. Such a school could meet at regular intervals throughout the season, in sections of the district convenient to the greatest number of members, and the expense of capable instructors would be divided among all of the fire departments participating, which would bring it within the resources of practically all of the units, including those to which otherwise a school would be out of the question, owing to the expense involved.

The plan should receive very earnest consideration. It is the one link between the volunteer and the trained fire-fighter. It supplies for him the lack of training in service which he, of necessity, cannot have, owing to the comparatively small amount of fire-extinguishment he is called upon to perform. Those volunteer departments which are without this means of perfecting their men in their work are missing an opportunity of placing their department in the forefront of the volunteer ranks, an ambition which every such unit certainly cherishes.

No doubt this experiment of the Rockland County Association will be watched with great interest by other similar bodies, and, if successful, of which there apparently seems little question, would undoubtedly be taken up by many other firemen's association throughout the country.

The effects of such a chain of firemen's schools would be far reaching and revolutionary in the volunteer firemanic world. It would have a parallel effect to that which the fire colleges have had upon the fire departments of the larger cities as regards the science of fire-fighting. To realize what that means one has only to compare the methods of the present day with those of twenty years ago.

Should Stop When They See Fire Engines

Many cities have regulations providing that all motorists must stop and draw into the curb when they hear the siren of the fire apparatus. The trouble with an ordinance of this character is that it leaves the motorist the loop-hole to claim he did not hear the siren, owing to the noise of street traffic. Now comes the British Columbia Fire-Fighters' Association with a suggestion that should help to improve this situation. The motorist who fails to hear the sound of the siren, through the interference of other sounds, through inattention, or what not, cannot fail to see the apparatus approaching. On this fact the association bases its idea of traffic regulation, and asks that the government make it compulsory for the autoist to draw into the curb and stop the moment that the approaching apparatus can be distinguished.

This is a suggestion which may have some effect in rendering excuses which motorists are prone to give when caught violating the law—that they did not hear the siren's notes—of no avail. If the seeing of the fire engines as they approach and failing to stop and draw into the curb constitutes a violation, there will be fewer reckless drivers whose one idea, on hearing an alarm, is to get to the fire before the fire apparatus, and obtain a vantage point from which to see the fire.

Life Insurance for Firemen

The vocation of the fireman is an extra-hazardous one. This fact militates against his obtaining moderate price life insurance, in spite of the fact that he needs it more than others who are in less constant peril of their lives.

A plan just adopted in the fire department of Knoxville, Tenn., seems to obviate this difficulty. Through

the action of an old line company, the members of the department are enabled to take out life insurance irrespective of age or physical condition. This is done by means of the group insurance plan, and the amounts of the policies in the case of the officers from chief to captain is limited to $5,000 and from this grade the latter grade down to the privates, from $3,000 to $1,000.

It is proposed by the city manager of Knoxville to include in the budget of next year enough of an appropriation to defray at least a quarter of the expense of these premiums, and thus so far to relieve the firemen of the burden of providing for their families in case of death.

But even with no governmental assistance, the opportunity for the firemen to obtain protection for their relatives in case of their demise, would no doubt be welcomed gladly by most of the men throughout the country, and this plan deserves to be extended to other cities without delay.

Aside from the hazardous nature of his calling, the fireman should be a desirable risk for a fire insurance company. He must of necessity keep himself physically in the pink of condition, or he cannot last long as a member of the department.

Insurance companies, in taking up with this type of group insurance, are not, after all, taking any great or unusual risks. There are many other occupations, while less strenuous perhaps, which are far more destructive to human life than that of the fire-fighter.

The group plan of insuring firemen should become general in all fire departments.

Fire Department Exhibits at Exposition

At the "Own Your Own Home" exposition sponsored by the Chamber of Commerce of Elizabeth, N. J., the fire department had an exhibit that was very well received. Both the new and the old style fire alarm boxes were demonstrated

Exhibit of the Elizabeth, N. J., Fire Department at the "Own Your Own Home" Exposition in That City

in order to educate the public in the proper way of sending in an alarm. Animated transformation pictures on fire prevention were shown, and all kinds of fire department tools and supplies were displayed. In addition, there was a map of the city showing the location of all the fire alarm boxes.

Augusta, Ga., Purchases Pumper—An Ahrens-Fox pumper has been purchased by Augusta, Ga.

Ex-Chief of Bogata, N. J., Dead—Dudley P. Thorne, formerly chief in Bogata, N. J., died at his home at the age of forty-nine.

Bookings of "The Fire Brigade" Increase

Additional bookings of "The Fire Brigade," the motion picture sponsored by the International Association of Fire Chiefs, are being received daily. The following list contains the additional bookings that have been received since the publication of the lists in the previous issues of FIRE ENGINEERING.

Due to the large number of bookings that are being received for "The Fire Brigade," space does not permit a listing of all the theatres that have booked the motion picture. Instead a listing will be made of the first date at which "The Fire Brigade" is to be shown in a municipality.

City	Theatre	Date
Alabama		
Brewton	Vaudette	May 9-10
Arizona		
Bisbee	Eagle	May 29-31
Douglas	Grand	June 9-10
Lowell	Lowell	June 1
Morenci	Y. M. C. A.	April 21-22
Nogales	Nogales	June 1-2
Prescott	Elk's	May 4-5
Arkansas		
Arkadelphia	Royal	April 12-13
Conway	Conway	April 13-14
California		
Bay Point	Liberty Star	April 15 changed from April 7-8
Encinitas	Encinitas	May 18-19
Livermore	California	April 20-22
Los Gatos	Strand	April 28-29
Santa Clara	Rex	May 3-4
Sunnyvale	Strand	May 5-6
Connecticut		
Bridgeport	Bostwick	April 21-22
Meriden	Life	May 22-25
Delaware		
Smyrna	Strand	April 11-12
Georgia		
Cordele	Circle	June 9
Idaho		
Burley	Burley	May 11-12
Lewiston	Theatorium	May 1-3
Moscow	Kenworthy	May 10-12
Priest River	Rex	April 10-11
Twin Falls	Idaho	June 16-18
Illinois		
Cairo	Gem	May 3-5
Edwardsville	Wildey	May 4-5
Jacksonville	Grand	April 13-16
Morrisonville	Empress	May 17-18
Mt. Vernon	Plaza	April 27-29
Paris	Paris	April 18-19
Taylorville	Capitol	April 27-28
Thebes	Lafayette	May 27-28
Villa Grove	Star	May 9-10
Flora	Orpheum	May 9-10
Fairfield	Pershing	May 16-17
Xenia	Palace	May 10-11
Indiana		
Bloomington	Indiana	May 9-12
Connersville	Auditorium	May 17-19
Elkhart	Lerner-Buckland	May 8-11
Frankfort	Conley	April 24
Logansport	Luna	May 29-June 1
New Castle	Royal	May 8-12
Peru	Liberty	May 3-5
Tipton	Diana	June 13-15
Iowa		
Carson	Dreamland	April 15-16
Coon Rapids	Lyric	July 5-6
Muscatine	Amuza	May 3-6
Newton	Capitol	April 25-26
Paullina	Wonderland	June 22-24
Sheldon	Lyric	May 25-26
Spencer	Opera House	May 15-17
Vail	Cozy Corner	April 22-24
Kentucky		
Ashland	Capitol	May 15-18
Covington	Strand	June 12-15
Harlan	New Harlan	July 6-7
Middlesboro	Manring	August 25-26
Owensboro	Empress	June 21-23
Paducah	Arcade	July 28-30
Paris	Alamo	June 15-16
Richmond	Alhambra	June 15-16
Louisiana		
New Orleans	Capitol-Poplar-Tivoli	May 4-5
Maine		
Limerick	Town Hall	October 22
Orono	Strand	May 27
Rangeley	Pavillion	August 17
Rockland	Park	April 18-19
Skowhegan	Opera House	May 31

(*Continued on page 344*)

QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

"He that questioneth much shall learn much"—BACON

NOTE.—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Friction Loss in Hose and Standpipe

To the Editor:

What is the fixed rate of friction loss in 2½ hose per foot?

What is the friction loss in a standpipe 2½ inches in diameter by 50 feet high?

Respectfully yours,
R. C. W.
Rochester, N. Y.

Answer.—The friction loss in 2½-inch hose varies with the rate of flow of water through the hose. The greater the flow, the greater will be the friction loss per foot.

Below is a table giving the flow through 2½-inch hose with the friction loss per 100 feet and also per foot.

Flow G. P. M.	Friction 100′	Friction 1 ft.
140	5.2	.052
160	6.6	.066
180	8.3	.083
200	10.1	.101
240	14.1	.141
300	21.2	.212
400	36.2	.362
500	55.0	.55

From the above table you will be able to determine the friction loss per foot of hose for the particular flow you have in mind.

As to the friction loss in the standpipe 2½ inches in diameter and 50 feet high, the actual loss in the pipe itself is the same as that in the hose. There will be a little higher friction loss in the pipe than in the hose at high rates of discharge, but not sufficiently large to effect calculations.

In fire department problems where a standpipe in a building is employed, feeding one large nozzle or two or three small nozzles, the friction loss in the entire standpipe system is usually taken as 25 pounds. This, of course, is only an approximation but it serves sufficiently well to enable an officer to determine what pressure is required at the engine, after taking into account the back pressure and the friction loss in the hose layout.

Marking of Answers

To the Editor:

I am naturally very much interested in the matter contained in the "Questions and Answers" page of FIRE ENGINEERING in each issue and particularly in those items which have a bearing on our work. In your issue of February 23, 1927 appear certain questions and answers submitted by T. T. J. requesting a marking on each question.

Based upon the explanatory paragraphs submitted, I am wondering if you were justified in rating Question 1 as you did on the basis of the answers given. While the candidate has mentioned some of the improvements that could be made, he has not explained them in detail and the bulk of his answer pertains to matters not strictly relevant to the question. I would consider a rating of five as generous.

In regard to Questions 2 and 6 I note that you hold that the candidate should have stated reasons for *and* against inspections and the advantages *and* disadvantages of each size of hose. In each of these questions the word "or" is used which would naturally give the candidate his choice of which side of the matter he wished to present. I hardly think it is fair to penalize him for making a choice when permission for such choice is patently given. For this reason I would rate him very close to ten on Question 2. In Question 6 I would rate him seven, as you have, but for the reason that his answer is too general in character and that one who occupies the position of Battalion Chief should be able to express himself more clearly and to the point than is done there.

I am inclined to believe that you have been somewhat severe in your rating on Question 10. The candidate states the major advantages of such a school, viz., that of standardizing all of the work and instruction, very well. While it is true that the passing of this information along to the men is of importance, it is, strictly speaking, incidental to the matter of the officers all knowing the standardized methods of procedure and instruction. Officers could and do teach their men where no officer's schools are in use and enjoy a certain respect and prestige for so doing. Your mention of the impossibility of the entire department reporting for such instruction is hardly germane to the question. The same is true in regard to an officer taking the trouble to instruct his men. I would feel that the answer submitted would be entitled to a rating of at least eight.

I do not wish to appear unduly critical of the effort made to assist a reader, but I realize how much weight members of a fire department give to the items appearing in a responsible periodical and, being in the business of conducting promotional as well as original entrance examinations for positions in the various services, I could not help but wonder if T. T. J. would get the correct slant from your ratings and comments. Of course, different persons will rate answers somewhat differently, and the ratings I suggest reflect my ideas in the same way that your ratings reflect yours. The matter over which I was most concerned was the nature of the comments you supplied for the reason that I felt that they were hardly just to the contributor and might give him an entirely wrong idea of what should have been submitted in his examination.

Sincerely yours,
E. E. BULLARD, Chief Examiner,
Fresno, Cal., Civil Service Board.

Using Pumper in Center of Line

To the Editor:

If a pumper is placed 250 feet from a hydrant at which the pressure is 40 lbs., can the pumper boost the water along for a distance of 150 or 200 feet to a fire at this distance beyond the pumper? Hose in use is double jacketed rubber hose. Also, will the pumper cause the hose between hydrant and pumper to collapse.

How much pressure would there be at the nozzle—1 inch diameter?

Sincerely yours,
H. H. M.

Answer.—If a pressure of 40 lbs. was maintained at all times at the hydrant, even when the engine was in operation, the engine could deliver to the nozzle 250 gallons per minute without collapsing the hose.

This would mean that with a 1-inch tip a nozzle pressure of about 72 lbs. could be attained; with a 1⅛-inch nozzle, a nozzle pressure of 44 lbs; with a 1¼-inch nozzle, a nozzle pressure of 30 lbs.

A pressure less than 30 lbs. would not be considered of any use so that a nozzle larger than 1¼-inch could not be employed satisfactorily.

If the discharge were increased much above 250 gallons the hose would collapse, although it would not stay collapsed. Just as soon as a partial vacuum were created the hose would collapse, but the atmospheric pressures which collapses the hose being only 15 lbs. (approximately) per square inch, would not keep the hose collapsed but as soon as the flow was stopped the pressure at the hydram would be transmitted directly along the line and being greater than the atmospheric pressure would cause the hose to open up again. In other words there would be a series of rapid collapses and inflations as long as the pump maintained a vacuum in the feed line.

Giving Firemen Police Power

A communication was recently received from one of the readers of this journal with reference to the advisability of granting police power to uniformed firemen assigned to inspection duty and theatre and public hall assignments.

The question was submitted to Chief John Kenlon, head of the New York Fire Department, and opinion is as follows:

"As the specific wording of the proposed law has not been submitted, this inquiry resolves itself into the broad general question: Should members of the uniformed force of fire departments assigned to general fire prevention inspection duty and to theatre detail duty be given 'police power?'

"Inspection duty and theatre detail duty are practically analogous. They have for their common purpose the safeguarding of life and the protection of property. It will, therefore, be unnecessary to treat them separately.

"Police power may be used in either one of two ways: by summary action; i. e., immediate arrest, or by the service of a summons requiring the defendant's subsequent appearance before a magistrate.

"I believe that police power, exercised through the medium of the summons, would be an effective weapon in the hands of the uniformed force, but its use must be hedged with common sense and the seasoned experience of the Chief of Departmnt in each city, town or hamlet having the power.

"Firemen in the field on general fire prevention inspection duty should not be vested with the power. Their instructions should be that upon discovering a condition imminently dangerous to life or property, the abatement of which they are unable to secure, the immediate attention of the Chief of Department should be drawn to it, through the fireman's commanding officer, with the recommendation that police power be exercised.

"Similarly, where an average fire prevention order, having no direct relation with the human element, is persistently ignored or wilfully disobeyed, the attention of the Chief of Department could be solicited with a recommendation for police power.

"Again, a fireman detailed to a place of public assembly discovering a perilous condition, which the management refuses to abate instantly, should be schooled to bring the fact, by telephone, to the attention of the Chief of Department, or to the theatre visiting officer (in New York City known as the Theatre Inspector), recommending police action. Under normal conditions, the theatre inspector should arrive within a few minutes.

"Centralizing this power in the Chief of Department need not mean that he alone would have the sole power of taking police action. He should have a few capable, experienced and well-tried officers, preferably those who are eligible for retirement upon their own application for pension, and who place the safety of human life above political ambition, to whom the power of serving summonses could be given, and upon whom the Chief could rely for the taking of proper action when the recommendation for the use of this power was received.

"With the power thus restricted, the possibility of its abuse would be eliminated, the safety of the general public would be furthered, and red tape which now entangles the legal prosecution of fire prevention orders in many cities would be abolished.

"Thus is answered the general question "Should members of the uniformed force of fire departments, assigned to general fire prevention duty, and to theatre detail duty, be given police power.'

"What follows is but an angle which is worthy of serious thought on the part of those whom it affects:

"In many large cities, some in the very state from which the above inquiry comes, the fire department furnishes firemen for theatre detail duty not from among those on duty, but from the ranks of those men who volunteer to perform such duty on their off, or free, time. Men who volunteer are compensated from monies paid by the theatre owners. In some instances, the firemen detailed collect the entire amount for themselves, in others, the municipalities get a share and the firemen a share.

"Where this practice exists, particularly where the firemen share individually, is there not a tendency on their part to shield the theatre owners where violations are found? If the answer of those who know is in the affirmative, then police power in such communities might prove just another dead letter in the ever-growing volume of laws."

Chief Kenlon has very well covered this subject and it is believed that the suggestions he makes will prove of interest and value to our readers.

Friction Loss and "Expansion Loss"

To the Editor:

Please answer the following questions:

What would be the friction loss on a layout of 2½ inch iron pipe 500 feet long, 1¼ inch tip and 60 lbs. nozzle pressure?

Also the friction loss in 500 feet of the best rubber lined hose, same diameter and same size of tip with 60 lbs. nozzle pressure?

"A" claims that the so-called friction loss is a mis-applied term, and that when applied to ordinary hose it should be called "expansion loss."

"B" says no. "A" says that loss due to expansion is a great deal more than loss due to friction under ordinary fire conditions. "B" says no.

Suppose at an ordinary dwelling fire 100 feet of hose was laid in the street, snaked, but not kinked, in four or five places. Would much more pressure loss occur than if the line were straightened out? It is assumed that the snake line was midway of a 500 foot stretch.

Sincerely yours,
R. W. J., Detroit, Mich.

Answer: Where the nozzle pressure is 60 lbs. at a 1¼ inch tip, the flow will be in the neighborhood of 355 gallons per minute. With wrought iron pipe of good quality the friction loss per 500 feet carrying 355 gallons per minute is approximately 146 lbs.

With a good grade of 2½ inch hose, having the same flow, the friction loss is approximately 146 lbs., the same as with pipe.

"A's" claim regarding "expansion loss" is unsound. As a matter of fact, just the reverse occurs. When hose is put under pressure the interior diameter of the hose increases and this increase in diameter really makes a larger waterway, reducing the velocity of the flow while the discharge remains the same. This reduction in velocity of flow reduces the loss in pressure rather than increasing it.

Friction loss is a correct term. The loss of pressure really occurs by the rubbing of the water on the interior surface of the hose. The faster this rubbing occurs, (the faster the water travels) the greater will be the loss in pressure. The slower the water travels, the less will be the loss in pressure.

This is truly friction loss and not expansion loss as claimed by "A."

As to the effect of curves in hose lines on loss in pressure, there is hardly an appreciable increase due to the laying of the hose in a sinuous line. It may be safely said that the ordinary sinuosity of hose lines will not increase the friction loss more than 5%.

Wrecking a Pumper

To the Editor:

In a recent discussion on the rotary gear pump for fire service, the following question arose:

What would happen if the pump is being operated at full capacity, and the nozzles (shut-off) of three lines of hose attached thereto were suddenly shut off, the relief valve being closed?

In other words, the outlets being closed, and the relief valve failing to function, would the pump destroy itself.

If you can give us any information on the above conditions of operation, or any data on tests conducted under these conditions, we would appreciate your courtesy.

Yours respectfully,
D. E.

Answer: The understanding of your question is as follows: Three lines being supplied by a pumping engine operating at full capacity (rotary type pump) and the lines equipped with shut-off nozzles; all nozzles shut off instantly (at the same time) and relief valve fails to function.

In this case three things might happen: The engine might be instantly stalled, the pump casing might crack, or the hose might burst.

If the hose were in good condition and of sufficient strength, and the pump casing likewise, then the engine would stall.

On the other hand if the pump casing were defective it might crack, or if the hose were in bad shape it would probably go first.

However, modern rotary fire pumps are so built that they can stand a considerable amount of abuse. Furthermore, up-to-date relief valves do not fail to open as you infer.

And finally, no fire department is going to snap closed three nozzles at one time just to see what will happen.

If one line is snapped closed at a time, there is absolutely no danger to the pump.

Or if two are closed there is little danger of damage being done.

The practice of closing three at one time just to see what will happen should certainly be discouraged.

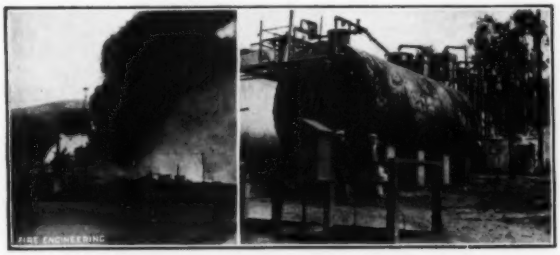
No pump manufactured can defy the efforts of a fire company which sets out to see what willl happen when unreasonable tasks are imposed upon a machine.

With any pump it is advisable to handle it as you would handle any piece of well built machinery—with care. If you are going to get the most out of your apparatus it is absolutely essential that you show it the attention and care which such high grade equipment deserves.

Sharptown, Md., Has New Siren—A siren has been purchased by Sharptown, Md.

Six Die in Ventura Oil Fire

A blast in a charcoal burner of the General Petroleum Company at Ventura, Cal., resulted in an explosion that spread



Views of the Oil Fire at Ventura, Cal.

Left—Scene of the fire at the absorption plant. Right—Flames scorched the asbestos covering of this oil tank but the insulation prevented the explosion of the gasoline.

flames to the plant that covered an area of about one city block and caused the death of six men—twenty-one men were severely burned.

The plant is located three miles outside of the city limits and its private fire protection consists of one pumper. A telephone call was sent to the fire department asking for aid. When the pumper arrived, the entire plant was ablaze, but

An Aerial View of the Plant Taken After the Explosion

the plant chief refused to permit the firemen to get close to the blaze for fear of a gasoline tank exploding.

An explosion of one of the stills covered six men with burning oil so that the men were burned to death. Others received severe burns. One authority places the loss at $200,000.

Two Fires at U. S. Army Post

Two fires, one of them extensive and serious, occurred on Monday night, March 14, at the U. S. Army Reservation, Ft. Schuyler, situated on a neck of the Borough of the Bronx, directly opposite Fort Totten.

The first fire, of undetermined origin, occurred in a garage. This was quickly extinguished without notice to the public fire department. The second fire, a half hour later, revealed the fact that there had been another fire previous to it.

The later fire was in the old fort, erected in 1833. It started among some chopped wood on which soldiers under discipline had been at hard labor that day.

Soldiers and firemen removed a half a ton of black powder from the scene of the fire. The fire required the combined efforts of five engine companies, two truck companies and three lines from a fireboat, which stretched about 1,000 feet to reach the blaze.

W. J. DALY.

Wellston, O., May Purchase Apparatus—Wellston, Ohio, is planning to purchase fire apparatus soon.

Monroe, La., Improves Fire Alarm System—Twenty additional fire alarm boxes have been added to the fire alarm system in Monroe, La. New equipment has been added to both the central fire alarm station and the various fire houses. A new bungalow fire station is in the course of construction, and when it is completed, it will house an engine company.

BIG TRAINING SCHOOL BUILDING DESTROYED THROUGH LACK OF WATER

Pennsylvania School Building Burned at Morganza—Many Departments Assist—Local Firemen Suspended During the Fire

THE large four-story brick administration building which for almost fifty-five years has stood on the summit of the Pennsylvania Training School Grounds at Morganza, Washington County, Pa., sixteen miles southeast of Pittsburgh, one of a half dozen buildings comprising the institution, was completely destroyed in a recent evening fire with a loss of $200,000. Parole records and other invaluable papers were lost in the flames that a number of fire companies, both volunteer and paid, hampered in their work by lack of fire hydrants and a poor water supply, were helpless to combat.

The fire, which was discovered just before seven o'clock, swept through the dry, old-fashioned building while firemen, having exhausted all the water in the school reservoir, fought vainly to check the progress of the flames with water pumped up the long hill from Chartiers Creek, a quarter of a mile away.

In spite of the lack of sufficient water and pressure, firemen were able to save a long three-story brick structure in the rear of the burning building. This building structure contains a chapel and auditorium. From the top of this building firemen played their streams of water into the burning structure.

The superintendent of the school whose living quarters and offices were in the burned building, could ascribe no other cause for the fire than an electric wiring defect of some kind.

The officers and employes had just finished their evening meal when the fire broke out. The superintendent telephoned for aid to the fire departments of surrounding towns while the engineering force of the school, aided by the older boys, made ineffectual efforts to fight back the flames.

Chief Richard L. Smith, of the Pittsburgh Fire Department, upon receiving the appeal for assistance about 8 p. m., sent two engine companies to the scene of the fire.

Arriving at the fire, being notified by the volunteer firemen already on the ground that there was no water on the top of the hill in the immediate vicinity of the burning building, the Pittsburgh companies set to work to draft water from Chartiers Creek. No. 39 pumper was placed as near to the creek as it was possible to be placed, three eleven-foot 4½-inch suctions, two from No. 39 and one from No. 10 pumper, coupled together, being required to reach the water in the creek, the pumper having a vertical lift of approximately twenty-five feet in drafting water. A pressure of 180 pounds was carried on the two lines. Shut off nozzles with one inch smooth bore tips were used on both lines which produced two good effective fire streams.

The Fire Department of the borough of Dormont which ad-

Upper, Side View, and Lower, Front View, of Fire Which Destroyed the Administration Building of the Pennsylvania Training School at Morganza, Pa.

joins the city of Pittsburgh on the south, responded to the call for aid with a Seagrave 350-gallon triple combination pumper and a company of twelve men in command of Chief of Department G. W. Dunlop.

Arriving at the scene of the fire the pumper was placed in position alongside of the building on the school grounds containing the gymnasium and swimming pool, the suction from the pumper being run through the basement window into the swimming pool from which source of supply the pumper furnished two good fire streams through 1,150 feet of 2½-inch hose with a pressure of approximately 175 pounds on both lines on which shut off nozzles were used, one with an inch tip and the other with an inch and one-quarter tip. The Dormont firemen traveled a distance of about nineteen miles to the fire and were on duty eleven hours.

While the Dormont firemen were working at the fire, the Dormont borough council voted to dispense with their services and at midnight, the night of the fire, were relieved of their duties. Chief Dunlop was ordered to give up his position as chief and report to the borough manager. He was later assigned to the position of mechanic to look after the repairs to motor apparatus in the department.

The action taken by the councilmen was the answer to a letter sent to the borough council by the firemen complaining about the appointment of a non-volunteer to the position of acting chief of the department during a recent illness of Chief Dunlop.

In the letter to council the firemen said that if council intended to use non-members of the volunters in fighting the fires in the borough it was doing so against the wishes of the members of the department. The letter said that if council thought they could do better by calling outside fire fighters, the present firemen would hand in their resignations. The resignations were offered for the approval of council. The Dormont Fire Department, consisting of seventeen men, is entirely volunteer with the exception of two drivers who are paid.

Up to the time of the above trouble when Chief Dunlop was relieved of his duties, he was a regular paid man. Since the trouble the man who is now acting in the capacity of chief only gets paid for the number or alarms or fires which he answers.

Firemen from Houston, Elwin, Glendale, Cannonsburg, Washington and Carnegie, all towns located in Allegheny and Washington Counties within a radius of sixteen or eighteen miles from the scene of the fire, answered the appeal for aid and rendered what service they could in controlling and extinguishing the fire in addition to that rendered by the City of Pittsburg and Dormont firemen.

The burned building was 180 feet long and 50 feet wide and contained seventy rooms, seventeen on the first floor, twenty-four on the second floor, twenty on the third floor and nineteen on the fourth floor. There were two stairways and twelve exits in the building. The building was also equipped with three fire escapes.

The private fire protection in the building consisted of two inch linen fire hose connected to three inch standpipes as well as a number of chemical fire extinguishers. The water supply to the building was supplied from a private reservoir on the school grounds and from Chartiers Creek which is a distance of 1,200 feet from the main building. The water supply also fed a few Ludlow double opening fire hydrants located near the main buildings. The school grounds covered nine hundred acres on which are erected a number of separate buildings in addition to the building destroyed by fire. The burned building, which was erected in the early seventy's, was of brick and wooden joisted construction, four stories in height, the fourth floor being of mansard type construction, with the interior construction of the building entirely of wood, with plastered walls over wooden lath and wooden floors, the floors being supported at the walls only, no columns for floor supports being used in the building.

WILLIAM E. PATTERSON.

Courtesy, Rocky Mountain News

Firemen Injured in Denver, Col., Factory Fire

Three firemen were injured, one seriously, when they leaped from a crumbling wall while fighting a fire in the American Crate and Basket Company factory in Denver, Col., recently. In the background can be seen the roof of the shed from which the firemen jumped to safety just as the third-story walls crashed. Chief Healy is in the foreground directing the men. The department was handicapped by bursting hose and the lack of hydrants in the vicinity of the factory.

Old New York Hostelry Destroyed

If ever the judgment of the New York Fire Department was vindicated, it was at the fire which partially destroyed the ancient Fort Lowry Hotel on the shore of Gravesend Bay, Brooklyn,

New York City Fire Trap Hotel Destroyed

One woman died in a fire that destroyed an old hotel in New York City, known as a fire trap by the fire department, as she attempted to save about fifteen dollars' worth of jewelry. Several firemen were burned in fighting the flames.

New York City, at about eight o'clock on Sunday morning, March 13th.

For several years, the New York Fire Department tried by every honorable means to have the four-story frame hotel vacated as a hazard and a risk; or instead equipped with automatic sprinklers, interior fire telegraph alarm and communication to the city fire department, and adequate fire escapes added.

The owners of the hotel fought the "vacate order" and then resisted the order to install the fire protection equipment. Litigation followed and a long, drawn-out wrangle dragged through the courts over a period of two years. The hotel proprietor obtained an injunctive relief restraining the fire department officials from enforcing the orders for the necessary fire protection equipment.

Finally, after considerable red tape and delay, the Supreme Court of Kings County (Brooklyn) upheld the then Fire Commissioner Drennan. Sprinklers and a fire alarm system were installed and the fire escapes were added.

It was the sprinklers that saved the structure from total destruction, although at that the fire reached fifth-alarm proportions and resulted in the loss of one life—a woman who had been out, but returned to recover some personal belongings. She escaped the second time, returned again, was overcome and died in the building.

There were approximately 150 persons in the hotel at the time. The fire originated in a room on the first floor and extended to the second, third and fourth floors and through the cockloft and cupola. The sprinkler system in the first instance helped to hold the fire somewhat. The fire department did the rest.

The hotel was built before the Civil War. It was, it its heyday, a fashionable summer resort and extended beyond the shore line of Gravesend Bay, once the resort for sporting folk, especially in the days of the old Gravesend race track. During the progress of the fire, Deputy Chief Patrick Maher, who was off duty, and lived nearby, took a hand in combating the flames. He was serious burned by a back draught.

W. J. DALY.

CHIEF McLANE INJURED FIGHTING WEST VIRGINIA CAPITOL FIRE

Temporary Building Together With Valuable State Records Destroyed—Flames Spread Rapidly but All Employees Escape

FIRE of unknown origin destroyed the "pasteboard capitol," as the temporary state buildings in Charleston, West Virginia, were known, and completely destroyed the records of the automobile department. The fire occurred on March 1. The blaze started near the center of the building, and when

Upper—Temporary Frame State Capitol; Lower—One View of the Department Fighting the Fire.

the fire department had arrived the flames involved the entire block. Flames spread so rapidly in the frame building, a large part of which was constructed of plaster board, that employees had to leave their personal belongings and run. Many jumped from the windows—some were taken down ladders by firemen.

Three alarms were sent in and brought out one Seagrave and one American-LaFrance 1,000-gallon pumpers, one 750-gallon one 350-gallon, one combination ladder, one ladder truck and one hose wagon all of the American-LaFrance make. A pumper close to the scene of the fire had to be shifted rapidly by hand in order to save the apparatus. Radiation from the fire broke windows in the Y. M. C. A. building about 250 feet away, and started fires in several buildings nearby. Firemen soon extinguished the incipient fires.

Chief McLane was seriously burned on his left hand and neck when he attempted to make a running dash past the burning building to reach two fire companies that had connected with a dead fire hydrant. Chief McLane stated that this was the hottest fire that he ever saw.

The building was built in 1921 for a temporary state capitol and was erected in sixty days after the burning of the old state house. The architect's estimate of the frame construction was $60,000 but it cost the state $225,000 before the temporary affair was completed.

At the time the fire occurred, it was used by the road commission, the labor department, state war veterans' service department and the negro welfare bureau.

Insurance Cancelled on Passaic, N. J., Stores—Policies on the stores and stocks in Passaic, N. J., are being cancelled by the various insurance companies doing business in the city. There have been a large number of fires since the first of the year and the various insurance companies have had heavy losses. One of the companies in an order to its agents said, "Cancel all policies in the Dundee section of Passaic. Don't renew any expiring policy of any kind located in this section."

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending March 25.

BOYLES, ALA.—Planing mill, Louisville & Nashville R. R.	80
MORRISTOWN, W. VA.—Barn of Chris Fritter	25
PALATKA, FLA.—Plant of Wolfenden Lumber Co.	40
BELLEVUE, MICH.—Shaler Bldg. South Main St.	25
GLENWOOD, MINN.—Two business houses destroyed	30
MILWAUKEE, WISC.—Hotel at Pleasant Valley Park	30
ROCKVALE, COLO.—A. P. Easton store and adj. property	30
MAYPORT, FLA.—Ann Tavern owned by John Daniels	30
SARANAC LAKE, N. Y.—St. Armand Hotel, one mile dist.	40
ELKINS, W. VA.—Car shops Western Maryland R. R.	180
MELVIN, MICH.—Pere Marquette station and adj. property	25
WATERVLIET, N. Y.—Two family residence destroyed	40
PEOTONE, ILL.—P. C. Schauger garage descroyed	25
OCEE, FLA.—Packing House, Marsh & Richardson	25
NORTH EAST, MD.—Warehouse of Wm. Craig destroyed	25
TARRANT CITY, ALA.—Property of Naphthalene Products Co.	60
MURFREESBORO, TENN.—Factory, Red Cedar Bucket Co.	180
BRONSON, TEX.—Saw mill of Kirby Lumber Co	40
ALLERTON, IA.—Several business establishments	80
LOS ANGELES, CALIF.—Stock of Globe Mercantile Co	40
ANDRADE, CALIF.—Warehouse of Imperial Irrigator Dist.	60
BELMAR, N. J.—Melrose Inn destroyed	25
WHEELING, W. VA.—Auto Sales Co. Storage plant	40
CHERAW, S. C.—Cheraw Box Mill plant destroyed	25
MINONG, WISC.—Garage of Fred Lang	80
THREE BRIDGES, N. J.—Plant of N. J. Milk & Cream Co.	50
OWENSBORO, KY.—O'Flynn's tobacco factory	40
WINDSOR, MASS.—Dwelling of Edward Garvin	25
CHATHAM, ONT.—Frame structure, Fifth street	25
BRANCH, R. I.—Branch River House and adj. property	40
WATERVILLE, ME.—Coburn Hall at Coburn College	40
JERSEY CITY, N. J.—Globe Mann Furniture Co. damaged	200
GROVE, OKLA.—Service Motor Co. and adj. store	50
McCRORY, ARK.—Business district damaged	200
MINEOLA, Tex.—Watts Motor Co., Bldg. damaged	25
KITCHIKAN, ALASKA.—Property of Sunny Point Packing Co.	200
TULLOS, LA.—Business section destroyed	50
PHILADELPHIA, PA.—Garage at 13th & Callowhills Sts.	80
PIERRE, S. DAK.—Pierre Central High School Bldg.	40
LYNN, MASS.—Central Junior High School	200
PIKEVILLE, TENN.—Bledsoe County High School	65
OAKLAND, CALIF.—Warehouse of Pacific Coast Canning Co.	175
HANOVER, PA.—Revonah Spinning Works damaged	40

Week Ending April 1

GIBBON, MINN.—Gibbon Roller Mill destroyed	25
HAMPTON, IOWA—St. Patrick's Catholic Church	25
LOS ANGELES, CALIF.—Ballinger Garage and adjacent property	80
BETTENDORF, IOWA—Plant of Air Reduction Sales Co.	80
CHICAGO, ILL.—Sani-Products Company and adjacent property	25
HAVERHILL, MASS.—Central House, Essex Street	25
BAYONNE, N. J.—Garage at 10-16 E. 17th St. destroyed	70
LYNCHBURG, VA.—Residence of Dr. M. Glass	25
PETERSBURG, VA.—Gray Products Co. and adjacent property	125
ARKADELPHIA, ARK.—Transformer plant, Ark. Power & Light Co.	40

(*Continued on page* 341)

Factory Gutted in Toronto Night Fire

A building in which dress forms were manufactured in Toronto, Canada, was gutted by fire which started from an unknown cause recently. The tenants in some of the nearby cottages were forced to vacate when District Chief Corbett responded on the first alarm. Three American-LaFrance 750-gallon pumpers, one aerial and two service ladder trucks, were used. On the second alarm, three 750-gallon American-LaFrance pumpers, one Seagrave chemical and one White hose truck with an aerial and ladder truck responded. It was four hours before the fire was believed out.

J. K. Lee, Jr.

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

Limited Funds—Town Assembles Own Truck

With a small treasury but with a most intense desire for new apparatus, the West Shore company in West Haven, Conn., finally decided to construct their own apparatus. A Packard

The Home-Made Squad Wagon

chassis was purchased for $110, and later a Pierce-Arrow hearse that had become obsolete as to style was obtained by trading in the previous chassis.

On this a new hose body was erected and a smaller set of wheels purchased so that the company could buy standard size truck tires. A discarded thirty-five gallon chemical tank was donated to the company. The entire job cost $750 plus the work of the members of the company.

Telephone Response to Alarms

Chief C. A. Wolverton of Port Angeles, Wash., has sent in the following letter as to how the problem of telephone calls is handled in his city. The original question was submitted by Chief Hinkley of Snohomish, Wash., and since then, a number of our readers have submitted suggestions.

To the Editor:

Our alarms come through the local telephone office, and when the siren is sounded, the firemen have a code by which they can obtain the location of the fire from the telephone exchange. The fireman says, "Firemen number one," or "Fireman number two" and he receives the desired information. To those not giving the proper code message, central replies that no information is given concerning fires.

We have a list of the firemen posted on the switchboard of the local telephone office and should a fire occur between 9 p. m. to 7 a. m. the operators call the firemen in rotation. But if Fireman No. 10 should call central before he is called, he will get the necessary information just the same.

The following is a sample of how the information is arranged on the telephone switchboard:

Fireman No. 1.....	C. A. Wolverton.....	Phone No. 692
Fireman No. 2.....	E. Harding.....	Phone No. 554W
Fireman No. 3.....	Robert Puyear.....	Phone No. 371

Every year the code is changed so that the public will not be able to learn how the system works.

We have three paid firemen and nine volunteers and through this cooperation with the telephone company, we have been able to turn out one hundred per cent.

Riverbank, Cal., May Purchase Apparatus—Riverbank, Cal., is considering the purchase of additional fire apparatus.

Station in Dillon, S. C., Completed—The fire station in Dillon, S. C., has been completed. It will house a pumper and a ladder truck.

CONTROLLING THE HAZARD OF DEFECTIVE CHIMNEYS AND FLUES

Flue Fires Often Result in Total Loss—Dangers of Unprotected Stove-pipes—Should Discourage Terra Cotta Flues

By CHIEF JACK BELL,*
Fire Department, Twin Falls, Idaho

RECORDS show that $22,746,308 of the fire loss results from defective chimneys annually.

One of the defects responsible for this alarming loss arises from chimneys built out of lime and brick. Sometimes the mortar has been properly mixed but the bricks poorly laid. Just under the ridge of the roof you may often observe the result of such workmanship. Note the cracks and openings between the bricks where sparks can easily be thrown out. We often see the costly result of such a flue.

Defective Flue Fires Often Total Loss

Fires from this cause are often total losses, as they rapidly gain headway before being discovered. After discovery they are hard to fight. We must not hazard our lives and lives of others and valuable property by tolerating such dangers.

Avoid Horizontal Length of Stove Pipe

A horizontal stove-pipe is a danger commonly overlooked. no crooks and turns in the pipe. Avoid level sections of pipe. If an elbow must be used let the horizontal piece of pipe be as short as possible and insure proper distance from the wall. Make sure that all pipes are far enough from walls and ceilings. If a level section of pipe is necessary remember that the pipe should be farther from the ceiling than the wall. Heat travels slowly through level pipe causing a great accumulation of soot and creosote. In a vertical pipe this is more easily drawn out through the flue. Soot is carbon. Carbon is used for melting steel. It is this accumulation which burns out in flues, causing level sections of pipe to become overheated and ceiling fires are the result.

Stove-Pipe Passing Through Walls and Floors

Stove-pipes passing through floors and walls are always a fire hazard and are one of the most frequent causes of fires. Though a ventilating thimble is considered safe, it very often is not. A pipe that is in full sight is certainly less dangerous than one that passes through ceilings, blind attics, partitions or closets before entering the chimney.

Our records show that many fires start from poor stove-pipe arrangements. Many times fires gain rapid headway, especially when they start in an attic or unoccupied room. Such arrangements cause great loss in lives and property. We must help to prevent such losses.

Danger of Terra Cotta Flues

Terra cotta flue make our chances for fires greater. Terra cotta is brittle and cracks easily. Instead of expanding when heating up and contracting when cooling off, it will crack. Rain or snow striking the flue above the roof causes a change in temperature. The sudden change frequently cracks the terra cotta. Small cracks grow into large ones. Buildings with this type of flue burn oftener than those equipped with brick chimneys. That is why companies charge more for insurance on such buildings or refuse to insure them. Let us not risk our lives and property. Let us take no chances with the Fire Demon. Let us install standard brick flues and keep them clean.

*From a paper read before the annual convention of the Idaho State Firemen's Association.

Sellerville, Pa., to Have New Station—Construction has started on a two-story brick fire station for Sellerville, Pa.

Albion, Mich., to Purchase Apparatus—A fund of $5,000 has been raised with which to purchase a rural type fire truck.

KNOXVILLE FIREMEN PROTECTED BY LIFE INSURANCE POLICIES

Recommendations Made That Cost of Premiums Be Defrayed by Budget Next Year—Size of Policy According to Grade

DEPENDING on the grade, men in the fire department of Knoxville, Tenn., will have the opportunity of obtaining life insurance protection up to $5,000 for a premium charge below that customarily made.

Under the terms of the policies, the men are not required to pass rigid physical examinations and age is not a determining factor in the establishment of the protection charge. The premium is fixed at $16.15 a year per $1,000 of insurance.

Captains, assistant chiefs, and the chief of department are entitled to $5,000 insurance under this plan. Those below this rank may apply for and receive policies from $1,000 to $3,000.

As a safeguard that the insurance may not lapse because of failure to pay the premiums, the charge is deducted from the pay of the men semi-annually.

Chief Boyd said, "I think it is the best opportunity the men of the fire department have to secure additional protection at a very low cost."

City Manager Karns recommended that the city include in next year's budget, a fund to pay for the insurance premium of the firemen. He said that the firemen receive $150 a month out of which they are expected to pay for their uniform and equipment, and therefore, the city should shoulder part of the premium charge.

Irregularities Void Fire Test

New tests will be required and 104 examination papers submitted by candidates in Portland, Ore., who are seeking promotion from hoseman to junior captain will be declared void because of reports of irregularities during the examination.

Although no formal complaint has been filed, the action has been taken to avoid future trouble from the candidates for promotion.

The examination was conducted in the public auditorium. Usually city examinations are held in the council chambers at the city hall, but because of the large number of entrants the auditorium was used. Some of the men, it is reported, exchanged answers to questions and some of the firemen left the room, ostensibly to telephone.

No formal complaint has been made by the firemen as to the character of the examination, but reports had it that some were dissatisfied with arrangements which they said permitted some of the firemen to exchange answers and others to leave the room at the public auditorium to telephone.

W. E. Marion, secretary of the board, said the examination was conducted in the same manner that all other such examinations have been conducted and that a similar examination was given not long ago for lieutenant, before the grade was changed to junior captain. He also said that if there had been any cheating he did not see any of it and he pointed out to the firemen that any help that one man gave another would result against the donor, as the examination was a competitive one.

What's Burning

(*Continued from page* 339)

ST. LOUIS, MO.—Warehouse, Boggs Broom Corn Co..... 100
CHICAGO, ILL.—Germania Club damaged..... 80
CONNELLY SPRINGS, N. C.—Blue Ridge Cotton Mills..... 125
GLACE BAY, N. S.—Glace Bay Hotel and McDonnell block.. 300
WOODVILLE, O.—Residence of J. W. Bruns destroyed..... 30
ROME, GA.—J. L. Adams Motor Company..... 65
EAST CHICAGO, IND.—Business establishment and apts..... 125
TOLEDO, O.—Warehouse, Sinclair Oil Company..... 125
BOSTON, MASS.—Argonaut Club destroyed..... 250
RONDA, N. C.—Plant of Yadkin Valley Furniture Co..... 125
SELTON, N. J.—Five planes at Hedley Air Field..... 200
MINERAL SPRINGS, ARK.—J. G. Friday Lumber Co. mill.. 40
LINN CREEK, MO.—Moulder Hotel and adj. property..... 30
PICHER, OKLA.—Jig mill, Tar Creek Mine..... 60
DE PERE, WISC.—Hagemeister Realty Co. property..... 25
FORT WORTH, TEX.—Collins Art Co., Houston St..... 60
NEWARK, N. J.—Factory, 181 Washington St., damaged..... 40
YUMA, ARIZ.—Irrigation warehouse damaged..... 80
AURORA, MO.—Mill, Aurora Milling Company.....125
THROOP, PA.—Ben Gigorski residence and adj. property..... 45
MANKATO, MINN.—St. Peters Parochial School..... 70
PESHTIGO, WISC.—St. Mary's Catholic Church destroyed..... 25
MARSHFIELD, WISC.—Palace Garage damaged..... 40
SAWTELLE, CALIF.—Bakery at Soldier's Home destroyed... 50
CHICAGO, ILL.—Columbia Bldg., damaged..... 400
FRANKLIN, N. H.—Syndicate Block damaged..... 325
NORTH BERGEN, N. J.—Plant of Homestead Yarn & Dyeing Co..... 25
BRACKENBRIDGE, PA.—Dept. store and adj. bldg..... 80
CARSON, VA.—Carson Agricultural High School..... 25
CHICAGO, ILL.—Kessler Bros. Furniture house..... 40
RONDA, N. C.—Yadkin Valley Furniture Co..... 125
IMPERIAL, PA.—Business bldgs. and apartments..... 25
LOS ANGELES, CALIF.—Van Neys Planing Mill..... 45
LOS ANGELES, CALIF.—Ballinger Service Garage..... 80

KANSAS CITY, KAN.—Two fires mentioned in the issue of March 9, with an aggregate loss of $60,000, as having occurred in Kansas City, Kan., should have been reported as occurring in Kansas City, Mo. These were respectively in a building at Fifth and Grand Streets and in the plant of the Murphy-Russo Paint Co. The fire loss of Kansas City, Kan., so far this year, according to Night Chief William B. George, has amounted to less than $5,000.

Danville, Va., Has New Fire Alarm Office

Danville, Va., has a new central fire alarm office equipped with a Gamewell fire alarm system consisting of one 12-circuit storage battery switchboard, one 10-circuit automatic repeater, one 12-circuit protector board, two 90-inch four-shelf battery racks, 210 cells and one motor generator set. The new system takes care of the boxes at present installed but provisions are provided for the expansion of the city.

Sing Sing Has Its Own Fire Department

The famous Sing Sing penitentiary at Ossining, N. Y., is protected by its own fire department and by a well trained crew of fire-fighters. The fire-fighting unit has two steamers and various kinds of hand appliances. The department is under the guidance of the keeper who is seated in the driver's seat; he was formerly fire chief in Ossining, N. Y. The prison walls are in the background.

Aerial Ladder Delivered to Minot, S. D.—A 75-foot aerial ladder truck has been delivered to Minot, S. D.

Clarks Summit, Pa., to Have New Apparatus—Clarks Summit, Pa., expects the delivery soon of a 500-gallon pumper to take the place of the present 300-gallon pumper that has been in service for some time.

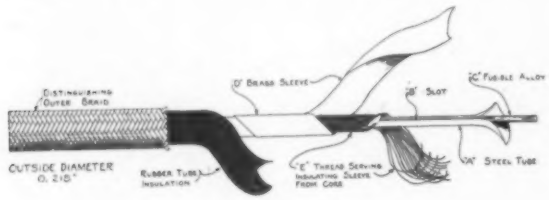
New Station Opened in Louisville, Ky.—Many people in the neighborhood of the new station No. 4 in Louisville, Ky., attended the celebration to mark its official opening. Entertainment and refreshments were provided.

INDUSTRIAL PLANT PROTECTION

Thermostatic Fire Alarm System

A fire alarm system is being marketed for industrial buildings or large residences that is based upon the principle of the expansion of a long wire which fuses in the event of fire and forms an electrical contact.

The wire is but three-sixteenths of an inch in diameter and it may be painted to conform with the interior color of the room. The wire is made of an inner conductor that has a



Construction of the Thermostat Wire

The inner conductor of this wire called "A" is a laterally slotted steel cylinder that is constructed about a fusible alloy that is labelled "C." The slot is indicated as "B." The outer conductor is a spirally wrapped brass pipe "D." The two conductors are separated from each other by means of the cotton insulating layer "E." When the temperature of the wire is raised, the alloy fuses and expands and spurts through the lateral slot, permeating the threads "E" and forming an electrical contact with the brass sleeve. This makes a short and starts the signal.

lateral slot. The wire with the fusible alloy which forms a core, is then insulated by a layer of cotton thread from a brass sleeve that forms the next layer. The whole is then covered by rubber insulation and the entire wire is protected by an outer braid. This wire is placed in each of the rooms that is to be protected.

At some central point is placed the main control panel. There is one lamp for each fire detecting circuit and the illumination of a lamp indicates the location of a fire. In addition to the visual indication, when the system is placed in operation, a gong starts to ring, and by means of a code pre-arranged, it is possible to note the location of the fire.

Each fire detecting circuit may, in addition, have one or more fire alarm boxes so that it is possible to turn in an alarm even before the system starts to operate.

In case of fire, the wire becomes heated and the inner core expands. The wire heats up, sputters and fuses so that a contact is formed with the outer brass sleeve thereby establishing an electrical circuit. During a test of this device at the Underwriters' Laboratories, the gong rang fifty-two seconds after the test fire was made.

This fire alarm system is known as the Garrison Fire Detecting System.

Sprinkler Valve Closed—Fire Spread

According to the observations of the Kentucky Actuarial Bureau, a small fire in the Louisville Bedding Company at Louisville, Ky., developed into a fire that completely destroyed the building because of the failure of the fire department officer in charge to appreciate the importance and assistance that could be obtained from a sprinkler system.

A new machine was being installed at the plant, and additional sprinkler heads were to be placed to safeguard the new equipment. The American Protection Company were notified by phone that the gate valve would be closed at a certain hour to make the changes in the system. A small fire was discovered by one of the workmen in twenty-five bales of cotton. He called the foreman. The fire was fought with a small hand fire extinguisher and as all of the other employees had left the building, it was a lone fight. Unable to check the fire, a call was sent to the fire department from a street box.

The foreman attempted to re-enter the building to open the sprinkler gate valve but the smoke drove him back. When the firemen arrived, a member of the salvage corps attempted to enter the building to open the valve but he was unsuccessful. The fire was fought mainly from the roofs of the adjoining buildings but the fight was futile—the buildings were destroyed.

Later observations disclosed the fact that the area about the controlling gate valve was never intensely hot in the early stages of the fire. The foreman and later the fireman could have entered the building if they had means of overcoming the smoke. On the apparatus were two smoke masks of the approved type that would have enabled the men to enter the smoke-filled area, but no one thought of it.

An official of the bedding company who was an eye witness to the operations of the fire department stated that prompt and efficient operation of the department would have avoided the large loss.

Committee for Virginia Convention

An executive committee has been formed to handle the work incidental to the fort-first annual convention and tournament of the Virginia State Firemen's Association that will be held in Alexandria, Va., on August 24–26. The committee consists of Chief James M. Duncan, Jr., chairman; E. E. Lawler, Jr., secretary and Charles W. King, treasurer.

Sub-committees have been appointed for the financing, parade, hotel matters, publicity, music, entertainment, program and contests for the coming gathering. An appropriation of $6,200 has been made to finance the convention.

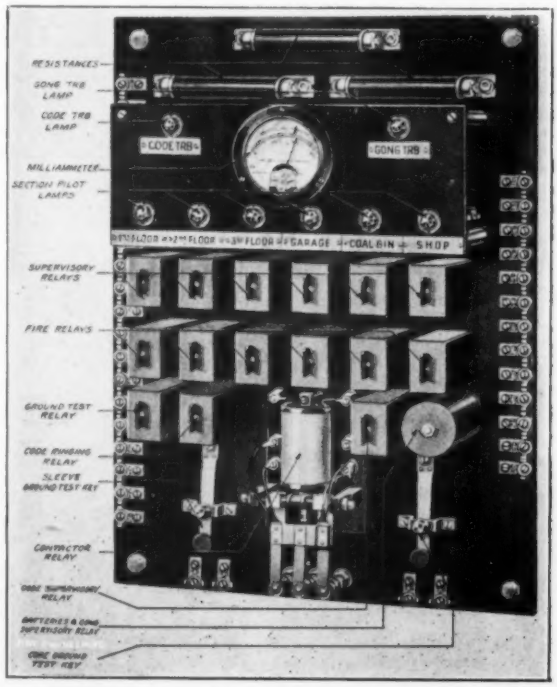
Departments in Maryland, Delaware, Pennsylvania and New Jersey are to be invited to compete in the various contests that are being arranged.

Four Firemen Injured in Apparatus Crash

Four firemen narrowly escaped serious injury when a pumper in Augusta, Ga., crashed into a pole while responding to a fire alarm received by telephone. The men were injured to some extent and were immediately rushed to a nearby hospital.

Chief John B. Kennedy in his department report recommended the purchase of two new pumpers, one to replace the one that was damaged in the accident and the other to be used for Company No. 5 which at present has an old Webb combination apparatus.

JOHN A. STULB.



The Main Control Cabinet of the Detecting System

CONVENTION DATES

May or June—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. 22nd Annual Convention, Darlington, S. C., date at pleasure of Convention City. Secretary, R. S. Hood, Sumter, S. C.

May 3-4—SOUTH DAKOTA ASSOCIATION OF FIRE CHIEFS. Annual Convention, Brookings, S. Dak. Secretary, Chief C. M. Johnson, Rapid City, S. Dak.

May 9-12—NATIONAL FIRE PROTECTION ASSOCIATION (International). 31st Annual Meeting, Congress Hotel, Michigan Ave. and Congress Street, Chicago, Ill. Secretary, Franklin H. Wentworth, 40 Central St., Boston (9), Mass.

May 31-June 3—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. 21st Annual Convention, Niagara Falls, N. Y., in connection with Conference of New York State Mayors and Other City Officials. Secretary, Chief James H. Golden, Cohoes, N. Y. Chairman, Exhibit Committee, Chief John Espey, Elmira, N. Y.

June 1-2—INSTITUTION OF FIRE ENGINEERS (British). 4th Annual Conference, Liverpool, England. President, Firemaster A. Pordage, Edinburgh, Scotland. Interim Secretary, Miss M. B. Calder, Edinburgh Fire Brigade.

June 7-9—OHIO FIRE CHIEFS' ASSOCIATION. 10th Annual Convention, Mansfield, Ohio. Secretary, Chief Philip J. Harty, Fire Department, Youngstown, Ohio, Sheet and Tube Company.

June 7-9—SOUTH DAKOTA FIREMEN'S ASSOCIATION. Annual Convention, Pierre, S. Dak. Secretary, J. J. Waltner, Freeman, S. Dak.

June 8—NORTHWEST ARKANSAS FIREMEN'S ASSOCIATION. Annual Convention, Springdale, Ark. Secretary-Treas., F. M. Brock, Bentonville, Ark.

June 14-16—TEXAS STATE FIREMEN'S ASSOCIATION. Annual Convention, San Antonio, Tex. Secretary, Olin Culbertson, Hillsboro, Tex.

June 16-18—PROVINCIAL FEDERATION OF ONTARIO FIREFIGHTERS. Annual Convention, Windsor, Ont., Can. Secretary-Treasurer, David H. Lamb, 132 Bellevue Ave. (2) Toronto.

June 17-19—WISCONSIN STATE FIREMEN'S ASSOCIATION. 40th Annual Convention, Baraboo, Wis. Secretary, E. Philip Mueller, Jefferson, Wis.; State Organizer, Chief H. H. Niemeyer, Portage, Wis.

June 17-20—SIX COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Sunbury, Pa.

June 21-23—FLORIDA STATE FIREMEN'S ASSOCIATION. Annual Convention, Hollywood, Fla. Secretary, Chief F. C. Pfaender, Winter Haven, Fla.

June 21-23—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 38th Annual Convention, Poughkeepsie, N. Y. Secretary, Chief Chris W. Noll, Fire Department, Poughkeepsie.

June 21-23—KENTUCKY STATE FIRE CHIEFS' AND FIREMEN'S ASSOCIATION. 9th Annual Convention, Owensboro, Ky. Secretary-Treasurer, Capt. S. G. Render, 303 Speed Bldg., Louisville, Ky.

June 21-23—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 5th Annual Convention, Congress Hotel, Portland, Me. Secretary, Chief John W. O'Hearn, Watertown, Mass. For reservations address Geo. F. Cobb Traffic Manager, 774 Albany Street, Boston, Mass.

June 21-24—THIRD SHORT COURSE IN FIRE PREVENTION. To be held at University of Illinois, Urbana. Address, C. E. Palmer, 401 Engineering Hall, University of Illinois, or State Fire Marshal John G. Gamber, Springfield, Ill.

June 27-29—MICHIGAN ASSOCIATION OF FIRE DEPARTMENT CHIEFS. Annual Convention, Bay City, Mich. Secretary, Chief Frank Ford, Highland Park, Mich.

July 12-14—MICHIGAN STATE FIREMEN'S ASSOCIATION. 53rd Annual Convention, Lansing, Mich. Secretary, H. L. Williams, Luddington, Mich.

July 13-14—INDIANA FIREMEN'S ASSOCIATION. 10th Annual Convention, Indianapolis, Ind. Secretary, Frank H. Miller, Fire Headquarters, Terre Haute, Ind.

July 19-23—SOMERSET COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual Convention, Rockwood, Pa. Secretary, J. R. Shanks, Rockwood, Pa.

July 25-28—DOMINION ASSOCIATION OF FIRE CHIEFS. 19th Annual Convention, Hull, Quebec. Secretary, Chief James Armstrong, Kingston, Ont.

August—IDAHO STATE FIREMEN'S ASSOCIATION. Annual Convention, Wallace, Idaho, tentative date, last week of August, to be decided later. Secretary, Willard Adams, Rigby, Idaho.

Aug. 1-2—WASHINGTON STATE ASSOCIATION OF FIRE CHIEFS. Annual Convention, Chehalis, Wash. Secretary, Chief H. S. Jenkins, Bellingham, Wash.

Aug. 4-6—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 34th Annual Convention, Portland, Ore. Secretary, State Fire Marshal Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.

Aug. 6—CALIFORNIA STATE ASSOCIATION OF FIRE CHIEFS. Annual Convention, Seattle, Wash. Secretary, Chief William Cooper, Richmond, Cal.

Aug. 7-8—OREGON STATE FIRE CHIEFS' ASSOCIATION. 8th Annual Convention, Portland, Ore. Secretary, Thomas Coates, Tillamook, Ore.

Aug. 9-11—CUMBERLAND VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 26th Annual Convention, Western Port, Md. Secretary, C. L. Jacobs, Waynesboro, Pa.

Aug. 9-12—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 55th Annual Convention, Portland, Ore. Secretary, Chief J. J. Mulcahey, Yonkers, N. Y.; Executive Secretary, State Fire Marshal Jay W. Stevens, Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief Albert Herring, Murphysboro, Ill.

Aug. 14-16—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. Annual Convention, Elmira, N. Y. Secretary-Treasurer, Frank A. Emden, 1200 Lenox Avenue, Utica, N. Y.

Aug. 16-19—FIREMEN'S ASSOCIATION, STATE OF NEW YORK, and WESTERN NEW YORK VOL. FIREMEN'S ASSOCIATION. Joint convention of both associations, Niagara Falls, N. Y. Secretary, State Association, Fred A. Davis, Fort Edward, N. Y.; Secretary, Western N. Y. Association, Henry A. Clark, 21 Porter Avenue, Batavia, N. Y.

Aug. 24-26—VIRGINIA STATE FIREMEN'S ASSOCIATION. 41st Annual Convention and tournament, Alexandria, Va. Secretary, E. K. Landis, Pulaski, Va.

Aug. 24-27—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Stockton, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth Street, San Diego, Cal.

Sept. 7—DELAWARE STATE FIREMEN'S ASSOCIATION. 7th Annual Conference, Rehoboth Beach, Del. Secretary, Sam H. Carson, Dover, Del.

Sept. 7-8—MISSOURI STATE FIRE CHIEFS' ASSOCIATION. 5th Annual Convention, Kirksville, Mo. Secretary, District Chief J. T. Lynch, Kansas City, Mo.

Sept. 7-8—MISSOURI ASSOCIATION OF FIRE FIGHTERS. 2d Annual Convention, Kirksville, Mo. Secretary, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis, Mo.

Sept. 12-14—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Russellville, Ark. Secretary, H. D. Compton, Little Dock, Ark.

Sept. 13-15—ILLINOIS FIREMEN'S ASSOCIATION. 40th Annual Convention, Jacksonville, Ill. Secretary, Roy A. Alsip, Champaign, Ill.

Sept. 20-21—IOWA STATE FIREMEN'S ASSOCIATION. 50th Annual Convention and Anniversary, Emmetsburg, Ia. Secretary, E. E. Parsons, Marion, Ia.

Sept. 22-24—NEW JERSEY STATE FIREMEN'S ASSOCIATION 50th Annual Convention and Anniversary, Atlantic City, N. J. Secretary, William Exall, Chamber of Commerce Bldg., Newark, N. J.

Sept. 23—NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. Annual Meeting, Atlantic City, N. J. Secretary, Fred A. Trowbridge, 17 South Street, Morristown, N. J.

Oct. 4-6—PENNSYLVANIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Shamokin, Pa. Secretary, Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 17-19—KANSAS STATE FIRE CHIEFS' AND FIREMEN'S ASSOCIATIONS. 11th and 40th Annual Conventions, Kansas City, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

New Rules of the New York Fire Department

(*Continued from page* 331)

necessary to grant leaves of absence after the morning report has been forwarded, it shall be noted on the back of the morning report for the following day.

In the column of "Remarks," the names of members detailed and on sick leave shall be written in full each day.

SEC. 274. Reports of operation at fires, giving all information required on the blank forms, shall be forwarded immediately upon return from fires or alarms.

Morning reports, and the particulars of all fires which they may hear of, other than those regularly reported, no matter by whom discovered or extinguished, or how trifling the damage, shall be forwarded after the morning roll call, by all officers.

SEC. 275. Reports on matters of special importance or urgency shall be dispatched to the Division commander as quickly as possible. When they are of the following character, or of a nature similar thereto, their purport shall be telephoned to the Division Commander in advance:

a. A sudden emergency or serious occurrence at a fire.
b. A loss of life or serious injury to human beings at fires or elsewhere.
c. The placing of a company or the apparatus out of service.
d. The inoperative condition of a fire alarm box.
e. Conditions involving imminent risk of life or peril of fire.
f. Flagrant violations of law or rules or orders of this Department by a member.
g. Depletion of the strength of a company below the number needed for fire duty occurring at or consequent upon a fire.

If the Chief Officer receiving reports of this character is not in a position to effectively dispose of such immediately, to the best interests of the Department, he shall communicate with the Chief of Department for instructions.

A report of his action on all cases submitted to him in compliance with this rule, shall be forwarded to the Chief of Department within twenty-four hours after their occurrence.

SEC. 276. Members returning to duty from leaves of absence, detailed or detached service of more than twenty-four hours' duration, shall report their return to the next superior in command at the time they assume their duties. If it is impracticable to report in person, they may report by telephone. Chief officers shall immediately report to the Chief of Department.

SEC. 277. Reports of operations at alarms for fire shall be forwarded by all officers, on the forms provided, as follows:

Company reports to the Chief of Battalion, who shall transmit them to the Chief of Battalion first due at the alarm. A consolidated report of all operations shall then be forwarded to the officer next in rank present at the fire, who shall, after examining same, state in the column of "Remarks" the exact time of his arrival at the alarm, time on duty, and the time of return to quarters. These reports shall then be forwarded to the Chief for Department.

Duplicate reports of operations at alarms in the Boroughs of Brooklyn and Queens shall be filed at the office of the Deputy Chief of Department in charge of those Boroughs.

SEC. 278. When an ununiformed member fails to report for duty at the time designated, commanding officers shall notify the Division of Audit and Accounts by telephone and forward a written report to the Chief of Department.

SEC. 279. Reports of meritorious acts shall be made immediately. The Board of Merit is required to examine reports within sixty days after the occurrence.

(*To be Continued*)

Tests Sell Magirus Ladder Trucks

Two sales of Magirus ladder trucks have been reported following the tests and demonstrations held in Indianapolis.

Gary, Ind., purchased an 85-foot Magirus aerial ladder truck and water tower equipped with a number of side ladders and accessories. The truck was inspected in Indianapolis by Mayor E. J. Williams, and members of the Gary, Ind., board of safety and Chief Frank Parkey.

Test of Magirus Ladder and Water Tower in Indianapolis.

The same tests were witnessed by Ira Kruger, fire and police commissioner of Aberdeen, S. D. Following this exhibition, Aberdeen purchased an 85-foot aerial ladder and water tower. This too is equipped with side ladders and accessories.

In this type of apparatus, the stream from the top of the ladder may be directed by a man stationed alongside the pipe and where he is well placed to guide it.

N. Y. City Buys New Equipment

Fire Commissioner John J. Dorman of New York city has awarded contracts for apparatus to the Seagrave Corporation for twelve 75-foot ladder trucks, and an order for six 750-gallon pumpers to the American-LaFrance Fire Engine Company.

An order was placed with the New York Belting and Packing Company for 20,000 feet of 1½-inch hose.

W. J. DALY.

Fireman Interested in Archery

In ancient days the bow and arrow was a weapon of self-defense and preservation. Expert archers defended castles by shooting their arrows from the high stone walls while the invading hosts attempted to return the fire and throw burning fagots over the walls. However, with the revival of archery as a sport today, the Burbank fire department in California is the first one of its organization to take up this fascinating exercise. The men of Engine Company Number One are greatly interested in this sport.

An excellent target range has been constructed on the green lawn beside the engine house. Behind the target is an old mattress which stops all the stray arrows—these were quite numerous at first, but now the arrows stick into the bull's eye most of the time. The swish and thudding of arrows may be heard many times during the practice periods of the day which comes between engine polishing and fire-fighting.

To be a skilled archer calls for a keen nerve and a steady hand in shooting. The mind and body must work in harmony and co-ordination. The average fireman possesses just such qualities of physique and nerve which should make him among the best of archers in this country. While shooting with the bow and arrow the chest and arm muscles are brought into excellent training and co-ordination.

Another important feature of the archery interest at the Burbank fire department is that the men are making their own bows and arrows. Jack Hoefer, well known authority on bow and arrow making in the southwest, is taking great pride in instructing his latest pupils in the art of bow and arrow making. About once a week Hoefer spends the afternoon at the Burbank fire station giving the archers the very latest ideas and methods on their new sport. With a little practice and good advice from an archer the average person will be able to make excellent equipment for himself. The firemen at Burbank are taking great pride in their bows and other archery equipment which they have made. Jack Hoefer has offered to instruct any other fire department in the mysteries of bow and arrow making at any time. This offer will undoubtedly be taken up by some of the other fire companies in the near future.

"Well, we're getting so that we can shoot a pretty fair score now," declared H. M. Davis, chief of the Burbank department. "It's only a matter of practice and our bunch will be able to offer a challenge to other archery enthusiasts."

Other city organizations are becoming interested in this new sport at Burbank—even the police department.

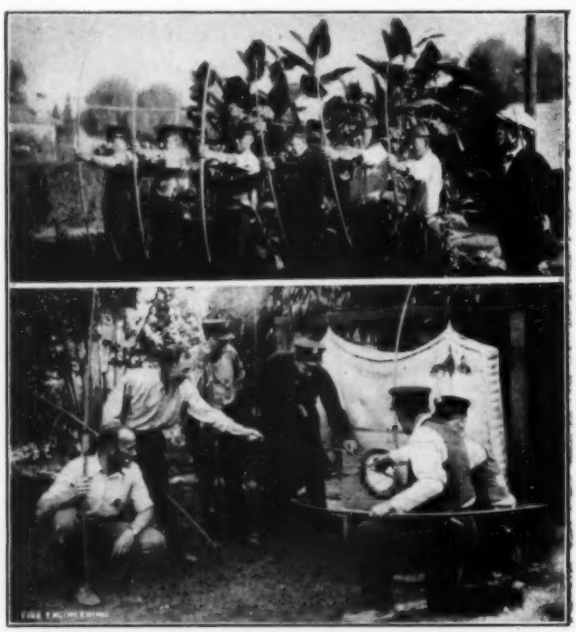
WILLARD D. MORGAN

Bookings of "The Fire Brigade" Increase

(*Continued from page 334*)

City	Theatre	Date
Maryland		
Camp Holabird	War Department	April 24
Camp Meade	War Department	April 24
Camp Meade	War Department	June 12
Chestertown	Lyceum	April 22–23
Crisfield	Arcade	May 12–13
Frederick	Tivoli	May 23–24
Hyattsville	Arcade	May 23–24
Mt. Rainier	Cameo	May 16–17
Princess Anne	Auditorium	April 27–28
Rockville	Seco	May 13–14 from April 28–29
Massachusetts		
Allston	Allston	April 18–23
Amesbury	Strand	April 25–26
Barre	Barre	May 12
Beverly	Ware	May 30–June 1
Brockton	Brockton	April 18–23
Chicopee	Playhouse	May 23–24
Dorchester	Field's Corner	April 24–27
E. Brookfield	Swan	May 6–7
E. Weymouth	Opera House	May 4
Everett	Capitol	April 18–20
Haverhill	Colonial	April 17–20 from April 25–26
Hyde Park	Everett Square	April 22–23
Jamaica Plain	Jamaica	June 6–8
Lexington	Lexington	May 18–19
Lynn	Olympia	April 24–30
Mattapan	Morton	May 15–17–changed from June 13–15
Maynard	Peoples	May 4–5
Methuen	Century	May 6–7
Milford	Opera House	May 9–11
Natick	Natick	April 28–30
Norfolk Downs	Regent	May 16–17
Palmer	Strand	May 16–17
Quincy	Quincy	April 17–20
Roslindale	Rialto	April 29–30
Roxbury	Dudley	June 6–8 changed from April 21–23
Salem	Salem	May 1–7
Spencer	Park	April 28–29
Uxbridge	Town Hall	May 9–10
Ware	Casino	May 9–10
Westboro	Town Hall	May 11–12
Westfield	Strand	May 23–24
Whitinsville	Star	May 2–3

(*Continued on page 347*)



The Ancient Sport Revived.

Upper—Members of a fire company in Burbank, Cal., lined up for the archery contest. The instructor is at the right. Lower—The target and some of the high scores made.

BUFFALO

When Considering New Apparatus

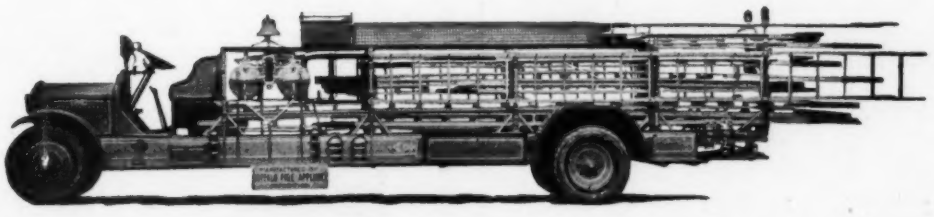
Remember that BUFFALO equipment is

1. Built to Your Order to Meet Your Particular Needs
2. Fully Guaranteed to Do the Work for Which Designed
3. Making-Good and Making Friends Wherever in Service
4. Designed by Experienced Fire Apparatus Engineers
5. Built by Skilled Workmen in a New Modern Factory
6. Constructed of the Finest Materials Money Can Buy
7. High Quality Fire Apparatus at a Reasonable Cost

May We Send You Complete Information?

BUFFALO FIRE APPLIANCE CORP.

Main Office and Factory, Buffalo, N. Y.



BUFFALO

COSMOPOLITAN

A Name That Means Protection for the Smaller Community

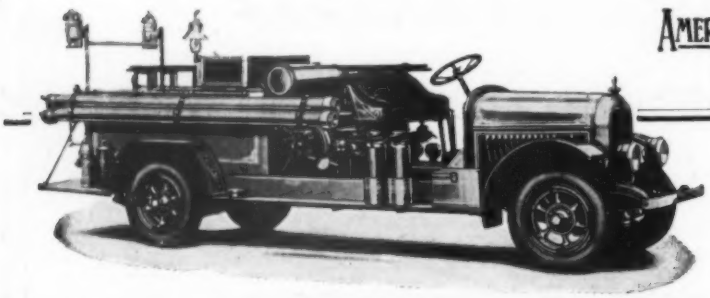
The Cosmopolitan brings to the smaller community the same efficient, dependable fire protection enjoyed by the metropolitan centers.

Priced at a figure which the smaller community can well afford to pay, the Cosmopolitan is a combination of the speedy Brockway truck chassis mounted with American-LaFrance fire equipment.

This fire equipment is built with the same engineering skill that features the equipment used in larger centers.

LaFrance Brockway apparatus is provided in chemical cars, pumpers and combination chemical and hose cars.

Let us send you illustrated literature.



AMERICAN-LAFRANCE FIRE ENGINE COMPANY, INC.

ELMIRA, N. Y.

BRANCHES	BRANCHES
New York	Denver
Pittsburgh	San Francisco
Boston	Minneapolis
Chicago	Kansas City, Mo.
Atlanta	Los Angeles
Dallas	Portland
Philadelphia	Baltimore
Montreal	Vancouver

Canadian Factory, Toronto, Canada

ALUMINUM BOXES

can't rust or corrode; sturdy; light weight. H-S sixteen round, succession, non-interfering type, precision operating fire alarm boxes have the confidence of the country's largest municipalities. Designed, built and installed by specialists. Write for descriptive bulletins.

HARRINGTON-SEABERG CORPORATION

DEPT. G, MOLINE, ILLINOIS

Manufacturers

Traffic Signal Equipment; Magnetic Sign Flashers; Fire Alarm and Police Signal Equipment; Complete Fire Signalling Equipment for Municipalities: Complete Installations.

BADGES

of Every Description

QUALITY GUARANTEED

Right Prices

Prompt Delivery

WE MAKE THE DURABLE

"ROSS" HELMET

OUR LATEST CATALOGUE AND PRICE LIST WILL GLADLY BE SENT ON REQUEST.

EVERSON-ROSS CO.

88 Chambers St., New York

(*Continued from page 344*)

City	Theatre	Date
Michigan		
Albion	Censor	May 2–3
Channing	Liberty	April 16
Detroit	Odeon	May 4–5 changed from May 12–13
Ecorse	Ecorse	June 8–9
Iron Mt.	Colonial	April 25–28
Iron River	Delft	June 15–16
Ironwood	Rex	May 2–4
Ishpeming	Ishpeming	May 18–20
Lansing	Gladmere	May 1–7 changed from April 17–23
Marquette	Delft	April 20–21
Nagaunee	Vista	June 1–2
Watervliet	Wa Paco	June 6–8
Minnesota		
Appleton	Scenic	July 11–13
Blue Earth	Sandon	May 6–8 changed from May 1–3
Breckinridge	Grand	June 9–11
Currie	Rex	April 17–19
Dodge Center	Opera House	May 25–26
Hector	Palace	June 6–8
Kasson	Opera House	May 23–24
Redwood Falls	New Dream	June 15–17
Tracy	Colonial	June 7–9
Winona	Colonial — State	May 5–7
Mississippi		
Aberdeen	Temple	April 27–28
Cleveland	Regent	April 7–8
Shaw	Regent	April 11–12
Tunica	Palace	April 6–7
Missouri		
Bowling Green	Huckstep	May 11–12
Columbia	Cozy	April 4–7
Columbus	Cozy	April 11–14
Kansas City	Royal	April 2–16 changed from March 12
Louisiana	Star	May 27
Macon	Grand	May 23–24
Memphis	Majestic	July 14–15
St. Johns	Gem	May 4–5
Missouri		
St. Louis	Virginia	April 28–29 changed from April 21
Wellston	Wellston	April 26–27
Montana		
Bozeman	Rialto	May 29–31
Glasgow	Orpheum	May 1–2
Great Falls	Liberty	May 5–7
Livingston	Strand	April 6–8
Plentywood	Orpheum	September 4–5
Nebraska		
Daykin	Community	July 4–5
Falls City	Electric	May 5–7
Scribner	Crystal	May 22–23
West Point	Auditorium	April 17–19
Wymore	Markle	June 5–6
New Hampshire		
Claremont	Magnet	April 20–21 postponed
Nashua	Colonial	May 5–7
Rochester	Scienic	July 11–12
New Jersey		
Asbury Park	St. James	April 18–20
Bayonne	De Witt	April 21–24
Belleville	Capitol	May 12–14
Bloomfield	Royal	May 19–21
E. Orange	Embassy	April 18–19
Freehold	Embassy	April 18–19
Irvington	Sanford	May 12–14
Jersey City	State-Tivoli-Central	April 21–24
Long Branch	Broadway	April 21–23
Maplewood	Maplewood	May 27–28
Millburn	Millburn	May 13–14
Montclair	Claridge	April 27–30
New Brunswick	State	April 4–9
Nutley	Franklin	May 27–28
Passaic	Montauk	April 21–24
Plainfield	Strand	April 18–23
Pompton Lakes	Colonial	May 2–4
Red Bank	Carlton	April 28–30
Union City	Lincoln	April 21–24
West Orange	Llewellyn	May 24–25
Woodcliff	Broadway	May 4–6
New York		
Addison	Star	April 18–20
Allegany	Town Hall	May 1–2
Astoria, L. I.	Astoria Grand	May 22
Auburn	Universal	April 10–13
Brooklyn	Berkshire-Ritz	May 9–10
Canandaigua	Playhouse	April 18–29
Clark Mills	Arthur Hind Club	May 7
College Point	Regent	May 24
Corona, L. I.	Granada	May 19–20
Dover Plains	Herbert's	August 23–24
E. Aurora	Aurora	April 21–22
E. Rochester	Rialto	May 23–25
Elmhurst	Victoria	May 30–31
Flushing, L. I.	Prospect	May 12–14
Forest Hills, L. I.	Forest Hills	May 17–18
Freeport, L. I.	Grove	May 12–14
Gloversville	Glove	April 6–9
Gouverneur	Grayln	May 24–25
Haverstraw	Capitol	April 27–29
Herkimer	Liberty	May 8–10
Hudson	Star	April 30–9
Jamaica, L. I.	Eckel	May 7–13
Johnson City	Goodwill	May 9–12 changed from May 6–7
Kingston	Reads	April 21–23
Lackawana	Park	April 7–8
Lake Placid	Palace	June 13–14
Long Island City	Idle Hour	May 23–24
Lowville	Bijou	April 24–27
Massena	Strand	April 27–29
Maspeth, L. I.	Maspeth	May 29–30
Mt. Vernon	Mt. Vernon	May 1–3
Narrowsburg	Community	July 14–15
Newburgh	Strand	April 27–28
Niagara Falls	Bellevue	May 15–18
Norwich	Colonia	May 1–4
Nyack	Broadway	April 21–22
Phillipsburg	Chamber St	May 16–17
Pt. Richmond, S. I.	Ritz	April 14–17
Schenectady	Rivoli	April 18
Springville	Pantheon	June 30– July 2
Stapleton, S. I.	Liberty	April 21–24
Syracuse	Capitol	May 18–19
Tupper Lake	Palace	June 20
Waverly	Capitol	May 18–19
Watkins	Glen	May 20–21
North Carolina		
Burlington	Carolina	June 13–14
Mt. Airy	National	May 17
Raleigh	State	May 19–21
North Dakota		
Edgeley	Iris	May 13–14
Grand Forks	Metropolitan	June 6–8

Newly Elected Chiefs

RIO, WIS.—Guy Denure.
ARTESIAN, S. D.—A. L. Zelinsky (re-elected).
ROSLYN, WASH.—W. G. Bennett.
PETERSBURG, NEB.—J. Ketteler.
ELMORE, MINN.—Geo. Cahoon.
LINDSAY, NEB.—L. G. Winkler.
ELKTON, MD.—Norwood Atkinson.
ROCHESTER, PA.—J. D. Cole.
SPRINGDALE, PA.—Herbert Sutton.
WYOMING, ILL.—J. A. McDonald.
SLADES CORNERS, WIS.—H. Schwanz.
MILAN, ILL.—C. O. Swanson,
STOCKTON, PA.—R. A. Reading.
GLEN ULLIN, N. D.—W. Stretmatter.
LITTLEFORK, MINN.—George Dahl.
GRANITE FALLS, MINN.—J. J. Knudson (re-elected).
NORTH LOUP, NEB.—M. E. Wellman.
VIOLA, WIS.—P. Fisher.
PLANKINTON, S. D.—J. E. German.
ONIDA, S. D.—H. Chamberlain.
DUNMORE, PA.—Frank J. Murphy (re-elected).
BALSAM LAKE, WIS.—Dan Murphy.
MONTEVIDEO, MINN.—Charles Waldeck.
BREWSTER, MINN.—A. L. Wells (re-elected).

Development of Fire Alarm Box Shells

A misunderstanding seems to exist at the present time as to when sand cast aluminum was first used for fire alarm boxes.

Shortly after the first fire alarm box movement was invented it became evident that it must have some protective covering if it was to be placed on the street. A wooden box with a slanting roof was built for this purpose after the fashion of house construction of the day. Thus, the term "cottage-type shell" was derived. It later became evident that the wooden box would not do for this purpose so the cast iron shell was developed.

Cast iron was used steadily thereafter, until some twenty years ago when the Gamewell Company manufactured a group of sand cast aluminum boxes for the City of Milwaukee. However, it was soon found that sand cast aluminum was not satisfactory for fire alarm box shells and was discarded by this Company. Sand cast aluminum was next used for this purpose thirteen years ago by the Star Electric Company of Binghamton, N. Y., which was later absorbed by the Gamewell Company. They also found that this material was unsatisfactory for fire alarm boxes and reverted to cast iron again.

Samples of sand cast aluminum boxes turned out by both companies from fifteen to twenty years ago, are on exhibition in the fire alarm museum maintained by the Gamewell Company.

The next important step in the history of fire alarm box shells was the adoption of "Herculite" metal for fire alarm boxes by the Gamwell Company. This proved to be as great an improvement over cast iron or sand cast aluminum as cast iron was over the first wooden box.

COURSE OF INSTRUCTION IN FIRE PROTECTION

AS GIVEN AT THE UNIVERSITY OF ILLINOIS

MODERN METHOD OF FIRE EXTINGUISHMENT

By HARRY K. ROGERS

Engineer, Western Actuarial Bureau, Chicago, Ill.

IN this thirty-second installment of the University of Illinois Course in Fire Prevention, Mr. Rogers gives some constructive ideas on fire-fighting, extinguishment and protection:

I recently heard quite a little discussion in reference to proper charges for soda-acid extinguishers and you do find a wide variation of specific gravity of sulphuric acid, when purchased here and there. In an ordinary forty gallon capacity extinguisher the proper charge would be, I think, sixteen pounds of soda and eight pounds of acid. An acid of a certain specific gravity would not be neutralized by sixteen pounds of soda as effecitvely as another specific gravity, and that enters into it. I think you should find the proper amount of acid for you to use and then stick to it. Don't buy here and there. On the smaller extinguishers buy the charge from the man that made the extinguisher, because they know what it is for. It was designed to carry certain things.

The carbon tetrachloride extinguisher is very effective in electric fires. It is a very poor conductor of electricity and there is not much danger of getting a short through your stream.

Use of Foam for Oil Fires

Oil fires, of course, are handled best by the foam type of extinguisher, which is an improvement on the soda-acid type. It creates a mass of soap bubbles, which act as containers for this gas. When a surface has once been coated by this mass of bubbles containing this gas it cannot support combustion. Fire cannot live and it will not do it. I have seen that so often in my own connections in Wichita, Kan., where we are in the heart of the oil fields. Foam type extinguishers are used very effectively down there. They will handle oil fires if you can get the foam to them in sufficient quantities.

Color of Fire Hydrants

Time is a very important factor in fire extinguishment and for that reason we advocate that all hydrants be painted a bright orange yellow. That's a radical departure from the old fire department idea that everything should be bright red. A bright orange yellow has the highest visibility of any color and no matter whether the ground is covered with grass or snow, or it is dark, you can see these hydrants a considerable distance, and a great deal of time is saved in the outlying districts if you don't have to look for a hydrant. I know there is a hydrant at the corner of so and so, but when I get there I have to grope around and feel for it. I don't know where it is, but if painted this color you can see it almost in the middle of the street, no matter how dark it is.

Should be No Law Regulating Fire Apparatus Speed

Again reverting to the question of time brings up the question of the regulation of the speed of fire apparatus. It is my opinion that there should be no set law or ordinance saying the fire apparatus shall not run over such and such a rate of speed. I don't think we should have anything of that sort at all, because a piece of fire apparatus responding to an alarm at three in the morning can travel with a great deal more speed, and with the same degree of safety, than it could at three in the afternoon. It doesn't make any difference if you open it up to sixty miles an hour, as there is nobody in the road. I think the thing to do in regulating speed is to get that speed as fast as possible and still be conservative with safety.

In Topeka, Kans., there was a bad wreck in the afternoon in which the assistant chief was injured in going to a fire. When they got back the order went out limiting the speed of the fire apparatus to fifteen miles an hour. This was sent out about five o'clock in the afternoon to all stations. About seven o'clock that night an alarm came in for the Thorn Hotel. I went down on the service truck from headquarters. We were running about fifteen miles an hour. On the way down the chief went by us running about forty miles an hour. When we got there it did not amount to much, there was some rubbish burning in the basement, but it locked bad. Chief Hammond, as soon as he saw it, pulled his car up to the curb, stood in the street and signalled for the truck to hurry. He forgot about his order of fifteen miles an hour. I think you should ride consistent with safety and get there as soon as possible. It might be well to consider that the difference between thirty-five miles an hour and fifty miles an hour on the average fire run probably will not make ten or fifteen, perhaps twenty seconds, difference and it is much better to travel thirty miles an hour and get there than it is to attempt to travel fifty miles an hour and never get there.

Law Does not Always Give Right of Way

I would advise firemen to look up their rights while going to a fire. Take it up with the city attorney in reference to your legal rights. You will find the law does not always give you the right of way. There are certain instances where you might get in bad, so it might be well for you to take that up with your city attorney.

Salvage Corps in a Small Town

Just recently I was in South Dakota at the little town of Redfield. They have a progressive chief, a fellow in the business heart and soul. They have a very small department, four paid men and a number of volunteers. They have several pieces of apparatus and one of them I want to describe to you, which is a Ford truck they built themselves. They bought a Ford chassis and built a body on it and in it they are carrying fifteen blankets, buckets and brooms and all ordinary equipment carried on a salvage truck. The fire department is doing this and we advocate it where it is possible for the fire department to detail one or two men to go in and spread blankets and do the actual mopping up. I think you will find it will be greatly appreciated by the citizens of your community.

Where the Fireboat "Mitchell" Didn't Work

In the February 9 issue of FIRE ENGINEERING there appeared an account of the Brooklyn Navy Yard Fire, and the description of the fire stated that the fireboats John Purroy Mitchell and the New Yorker saved considerable property.

Capt. F. W. Striffler of the fireboat A. S. Hewitt wrote in to point out an error in the account. He writes, "The fireboat John Purroy Mitchell wasn't there at all but the fireboat A. S. Hewitt responded on the first alarm and made the run from her berth in the Greenpoint section of Brooklyn in eight minutes. Five streams (three 2-inch and two 1½-inch) were soon playing on the fire, and our position was right ahead of the U. S. S. Receiving Ship Pueblo so as to give her full protection. A special call brought the New Yorker from Beekman street, New York. In reality the A. S. Hewitt was fighting the fire for some time alone and it was no losing fight either. I, and the rest of the crew of the fireboat A. S. Hewitt, feel rather ruffled at the scant recognition you gave us."

Eden, N. Y., Equipped with 500-Gallon Buffalo Pump

A 500-gallon Buffalo pump has been delivered to Eden, N. Y., and it has successfully passed the Underwriters' test. This is the fourth piece of Buffalo apparatus in the town of Eden.

The Signal for Fire Service

Long-lasting, washproof and *dressy*. The cloth is either best quality TubTesT chambray, or TubTesT dark blue percale. The shirt is guaranteed to wash without losing color or fit.

The detachable laundered collars save washing and make one shirt give the service of two. You don't have to wash this Signal every time the collar is soiled; you simply change collars.

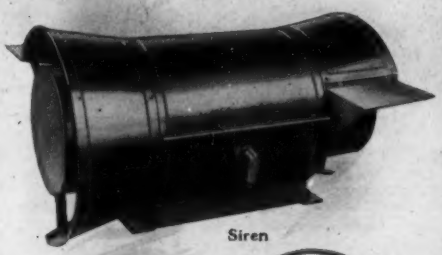
A *dressy* service shirt like this is what you need. Men look and feel "dressed up" in this Signal. The best way to improve the appearance of your department is to specify the two-collar style. In some cities this has been done. Write for samples.

SIGNAL SHIRT COMPANY
Racine, Wisconsin

UNION MADE

Signal
REG. U.S. PAT. OFF.
SUPERLATIVE QUALITY

Holtzer-Cabot Fire Alarm Systems for Small Towns

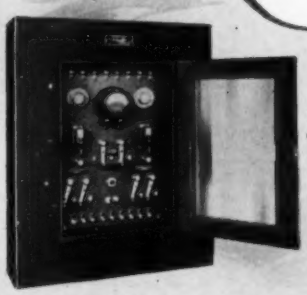


Siren

"M D"
Fire Alarm Station

Electric Sirens

Take the place of the antiquated bell or whistle for use in small towns as a fire alarm signal.
Will sound a general fire alarm or can be coded for location.
The Holtzer-Cabot Siren with its peculiar penetrating tone gives an understandable call for help.
It has a sound penetration radius of about two miles in ordinary weather conditions.
Write now for specifications.



Fire Alarm Control Panel in Case

Manufacturers of Signaling Systems for over 50 years

THE HOLTZER-CABOT ELECTRIC COMPANY

125 Amory Street
Boston, Mass.

6161-65 So. State Street
Chicago, Ill.

The Burrell All Service GAS MASK

The Standard for the Fire Fighters of America

The Burrell All Service Gas Mask is the only mask approved by the United States Government for complete protection against Carbon Monoxide, Ammonia and every known poisonous gas. Write for Bulletin F-3.

Mine Safety Appliances Co.

Braddock Ave & Thomas Blvd. Pittsburgh, Pa.

B & M *SIREN*

Did You Hear Our Sirens While You Were in New Orleans?

You could not have helped hearing them. Fire Chief Evans' car had one on, the Ahrens-Fox Aerial Ladder had one on their exhibit car and have made the B & M Siren standard equipment on their apparatus. The American-LaFrance Fire Engine Company had a B & M on their exhibit car; our own demonstrator was there, and I know that you heard the Sirens in the parade. We blew them steadily for one and a half hours without any intermission. The B & M is the only siren today that you can blow for that length of time. Why? Because it is mechanically driven.

Write for complete information. We gladly send B & M Sirens to any city on approval, transportation prepaid.

B & M Siren Manufacturing Co.

Lester H. Miles, Owner

931 So. Main St. Los Angeles, Calif.

A Nation-Wide Service for Better Protection Against Fire Loss and Water Damage

PROTECTION A.D.T. SERVICES

The remarkably efficient A. D. T. System of Central Station Night Watch and Fire Alarm Service has played a large part in helping to cut down the fire loss of the country; and the A. D. T. System of Sprinkler Supervisory Service has been instrumental in saving millions of dollars in water damage.

An Invaluable Service

It is generally known that water damage in sprinklered premises is considerably greater than fire damage, and it is a fact that in a great majority of sprinklered equipments no one on the premises knows how to shut off the water. Hence, the great importance and value of our Supervisory Service in not only recording water flows, but immediately sending representatives who know how to stop them.

Over $20,000,000,000

worth of property throughout the country is protected by A. D. T. services, and fire officials in cities everywhere are finding A. D. T. cooperation an invaluable aid in their work.

Send for Complete Information!

Controlled Companies

American District Telegraph Co.

Executive Offices, 183 Varick St.

New York City

WORCESTER FIRE ALARM SIGNAL

Made to meet local conditions. Four sizes. Operated by either steam or air.

Worcester Fire Alarm Signal is the result of many years' manufacturing experience. Built by specialists.

Our catalog R-51 will give you interesting information. It is yours for the asking.

Union Water Meter Co., Worcester, Mass.

New York: 50 Church St., Philadelphia, 411 Bulletin Bldg.

UNION

Water Meters - Chronometer Valves

Easy Turning Stops - Pressure Regulators

Presses for Lining Pipe - Alarm Signals

FIRE DEPARTMENT ACTIVITIES

Ex-Chief of Whitehall, N. Y., Dead—Charles Pecor, at one time fire chief in Whitehall, N. Y., died at his home in Troy, N. Y.

Clarksburg, W. Va., to Vote for New Station—At the April 19 election, voters will vote on the question of issuing $80,000 bonds for the construction of a new fire station.

Comm. Hultman Visits West Indies—Fire Commissioner Eugene C. Hultman of Boston, Mass., went on a three weeks' trip to the West Indies and in his absence Chief Sennott presided as acting fire commissioner.

Conyngham, Pa., to Buy Apparatus—Conyngham, Pa., is planning to purchase fire apparatus but opposition has developed. A faction urges that the money should be spent on the construction of sewers.

Pleasant Prairie, Ia., to Purchase Apparatus—Pleasant Prairie, Ia., will purchase fire apparatus soon. A fire station will be erected on land donated to the department. William Hermann is chief.

Patrol Station to be Erected Near Wilmington—Acting upon the recommendation of S. D. Turner county forester and fire warden, a fire patrol station will be erected in Mint Canyon near Wilmington, Cal., for fighting brush and forest fires.

Somerville, Mass., Apparatus Crashes—On the way to a fire, apparatus from Somerville, Mass., crashed into a trolley car, and luckily, the firemen escaped injury. Several in the street car were hurt.

Belleville, Ill., Firemen Want More Pay—The firemen of Belleville, Ill., all members of the International Association of Fire Fighters, presented a plea for an increase in pay of $15 a month and an annual vacation of fifteen days.

Durham, N. C., Extends Fire Alarm—New fire alarm boxes have been installed in East and West Durham and the Lakewood section of Durham, N. C. In all, about forty boxes will be installed.

Chief Kirwin of Newport, R. I., Dead—Funeral services were held March 29 for Chief Andrew J. Kirwin of Newport, R. I. A guard of honor was maintained at the chief's home from the time he died until the funeral.

All in Family Burned in Farm House Fire—The parents and their five children were burned to death in a fire which destroyed a farm house in Tunnelton, Pa. All of those burned were sleeping on the upper floor of the building and did not have a chance to escape.

Montreal Chiefs Discuss Traffic Control—The problem of traffic control was discussed at the monthly meeting of Police and Fire Chiefs Club of the Montreal, Canada, district at the Place Vigor Hotel. Chief Raoul Gauthier presided at the luncheon.

Scranton, Pa., Treasurer Charged with Crime—Fred W. Zitzelman, treasurer of the firemen's pension fund of Scranton, Pa., was arrested and charged with embezzlement when auditors found a shortage of $21,000 in his books. The discrepancies cover a period of fourteen months.

Coburn Hall, Colby College, Destroyed—Coburn Hall at Colby College, Waterville, Me., was damaged by fire. Students saved geological and biological specimens as well as apparatus in the laboratory. The hall was one of the oldest buildings on the campus.

New Jersey Acts to End Forest Fires—Because of the many forest fires in northern New Jersey, watch towers at Midvale, Newfoundland, Sparta Mounatin and Budd Lake have been ordered opened. The latest and largest fire burned over twenty-five acres in Hanover township.

Smoking by Girls Increases Fire Hazard—Chief Fred D. Graham of Wakesfield, Mass., has reported to the Board of Selectmen that smoking by girls between dances in the town hall constitutes a fire menace because of the stubs that are carelessly disposed of.

Poughkeepsie, N. Y., Needs Fire Alarm System—Chief Chris W. Noll warned the board of aldermen that improvements should be made to the fire alarm system as there were large areas in the city that were not reached by the fire alarm circuits.

Firemen Contribute for Portland Memorial—Firemen of Portland, Ore., have raised almost $5,000 for the David Campbell memorial fund to be used for the erection of a monument for the late chief. The approximate cost of the proposed memorial is $25,000.

Father of Peekskill, N. Y., Chief Dead—John Helleker, Sr., father of former Chief John Helleker of Peekskill, N. Y., died at his home at the age of seventy-four years. He was a member of the fire department in that town for fifty years. He is survived by two sons and two daughters.

Glace Bay, N. S., Has Bad Fire—The mercantile section of Glace Bay, Nova Scotia, Canada, was almost destroyed by a fire which consumed ten buildings and did a $350,000 damage. The Royal Bank of Canada and the Church of England were among the buildings attacked by the flames.

Compensation For Fireman Vetoed—Governor Alvan T. Fuller of Massachusetts vetoed a bill authorizing Chelsea to pay $2,000 to the widow of a former member of the fire department on the grounds that his death was caused by an illness which did not result from his injuries received in the line of duty.

Massachusetts Against Smokers—A favorable report has been made on a bill to provide a penalty of six months imprisonment for the careless dropping of a cigar or cigarette stub while in an automobile. The driver will also lose his motor license. The bill was drafted to try and reduce the number of forest fires.

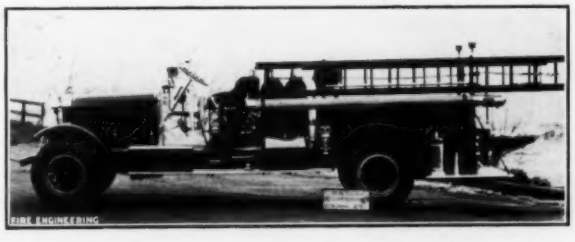
Tacoma Chief Te'ls of Needs—Chief Carlson told the Lions Club of Tacoma, Wash., of the fire department's needs. He explained that the city needed two new fire stations, a fireboat and more firemen. In commenting on water front protection Chief Carlson said that the city had good luck thus far but that the luck could not be expected to continue always.

Aeroplanes Destroyed in Stelton, N. J., Fire—Five aeroplanes were destroyed in a fire that consumed the U. S. government hangar at the Hadley Air Mail Field in Stelton, N. J. An oil-burning furnace in the rear of the hangar exploded drenching the interior of the huge frame and sheet metal structure. Damage was estimated at between 200,000 and $500,000.

Riverside, Ia., to Have Bungalow Station—A bungalow type of fire station will be erected in Riverside, Ia., at a cost of about $10,000. It will contain besides the apparatus room, a kitchen, dormitory, locker room and showers. Should future needs require additional apparatus, the dormitory may be converted into an apparatus room.

N. J. Firemen to Meet in Bayonne, N. J.—The annual convention of the New Jersey State Firemen's Association will be held in Bayonne, N. J., on May 17 and 18. On the last day of the convention there will be a parade in which will be many of the old types of apparatus. A banquet will be held in the evening at the Elks' Club.

Pennsylvania Firemen Oppose Removal of 2% Tax—The law committee of the Six County Firemen's Association of Pennsylvania are fighting two bills in the Pennsylvania legislature which provides for changes in the disposition of the two per cent tax on foreign insurance companies. For some years, a portion of this money has been appropriated for volunteer fire departments, and one of the bills being considered would do away with this relief.



Pirsch Markets First 750-Gallon Pumper

Franklin Park, Ill., received the first 750-gallon pumper marketed by the Peter Pirsch and Sons Company. At the 12-hours test conducted by the National Board of Fire Underwriters, the pumper delivered 768 gallons with ample reserve power.

PROPOSED IMPROVEMENTS

Savanna, Carroll Co., Ill.—To vote on April 19, on a $11,000 bond issue for fire apparatus.

Pleasant Prairie (Mail Stockton) Muscatine Co., Iowa.—It was voted to purchase a chassis for the fire department. Wm. Hermann recently elected chief.

Liberal, Seward Co., Kan.—A Seagrave pumper was recently purchased for the fire department.

Lancaster, Worcester Co., Mass.—Plans are being made for the installation of a new fire alarm system here.

Tupper Lake, Franklin Co., N. Y.—Village may issue fire apparatus bonds to the amount of $13,000 during July or August, according to Asst. Village Clerk Burton N. Sparks.

Hamilton, Butler Co., Ohio—To install new fire alarm boxes here. L. A. Waldner, City Manager.

Ringsted, Emmet Co., Iowa—It is being urged that chemical equipment be purchased for the fire department.

Adel, Dallas Co., Iowa—Town to purchase a new piece of apparatus for the fire department.

Randolph, Fremont Co., Iowa—Volunteer fire department to be formed here.

Hyattsville, Prince Georges Co., Md.—Plans are being made for the purchase of a new pumper for the fire department.

Norwood, Norfolk Co., Mass.—At the annual town meeting the fire department was awarded an appropriation for the purchasing of new equipment.

Westwood, Bergen Co., N. J.—An ordinance has been introduced in the Common Council providing for the issuance of fire apparatus and equipment bonds to the amount of $25,000.

Wharton, Morris Co., N. J.—Plans are being made for the purchase of new fire apparatus for the local department. Address the Borough Council.

Rutherford, Bergen Co., N. J.—A new pumper is to be purchased for the fire department.

Old Forge, Herkimer Co., N. Y.—Fire department planning to purchase new apparatus.

Fairport, Monroe Co., N. Y.—Fire department making plans for the erection of a new fire station.

Catskill, Greene Co., N. Y.—To purchase a new pumper for the Osborn Hose Co. John J. Fitzsimmons, President.

Leicester, Livingston Co., N. Y.—At recent election village voted in favor of a $4,500 bond issue for the purchase of a fire engine.

Valley Falls, Rensselaer Co., N. Y.—At recent election a $2,300 bond issue for the purchase of a chemical truck for the fire department was defeated.

Westfield, Chautauqua Co., N. Y.—At election held recently village voted in favor of the purchase of a pumper for the fire department at cost of $13,500.

Rugby, Pierce Co., N. D.—To vote on an $18,000 bond issue for a new fire station and city hall combined.

Petersburg, Dinwiddie Co., Va.—City is planning to issue bonds in the amount of $350,000; part of which is to be used for fire alarm system.

Morton, Lewis Co., Wash.—Considering the purchase of fire equipment here.

Rochester, Racine Co., Wis.—Volunteer fire department raising funds for the purchase of fire apparatus. The sum of $6,500 is needed.

Hancock, Delaware Co., N. Y.—Plans are being made for the erection of a new fire station here.

Mt. Morris, Livingston Co., N. Y.—It was voted in favor of a $5,000 bond issue for the purchase of apparatus for the fire department.

Dodgeville, Iowa Co., Wis.—The need of a fire siren and fire hose was discussed at recent meeting of the fire department. Wm. Mitchell, Chief of Fire Dept.

Tucson, Pima Co., Ariz.—An election is to be held in the near future to vote on a fire department bond issue to the amount of $28,000.

Keesville, Essex Co., N. Y.—To purchase a new piece of apparatus for the fire department.

Dundee, Yates Co., N. Y.—At recent election it was voted in favor of the purchase of a piece of apparatus for the fire department not to exceed $5,000.

Spencer, Tioga Co., N. Y.—Considering the construction of a fire station here.

Millbrook, Dutchess Co., N. Y.—At annual village election it was voted to purchase a new piece of apparatus for the fire department. E. H. Burch is President.

Glidden, Carroll Co., Iowa—Plans being made for the purchase of a new chemical car for the fire department.

Groveland, Essex Co., Mass.—Town has purchase a Seagrave Suburbanite triple combination pumper for the fire department.

Sunfield, Eaton Co., Mich.—At the coming election township is to vote on question of raising $4,000 by general tax to purchase fire apparatus.

Bliss, Wyoming Co., N. Y.—A fire department may be organized here in the near future.

Hempstead, Nassau Co., N. Y.—Committee has been appointed to investigate the various types of apparatus with view to purchasing a new fire engine for the local department. John Meddis, Chief.

Position Wanted as Fireman

Man with experience as fireman desires position in any city or growing town. Over ten years experience of practical fire fighting, serving as Captain of an Engine Company five years also as Secretary of a Department five years, alert, young and energetic, can give the best of references. Apply Box 138, % FIRE ENGINEERING, 225 W. 34th St., New York City. 3-9—3-23

The Logical Place

To advertise for bids and proposals for all Fire Department needs is in the pages of FIRE ENGINEERING. Write for special rates.

Department and Other Reports Received

Columbia, S. C.—Annual report of the Chief of Fire Department; 102 pages and cover.

Melbourne, Australia—Report of the Metropolitan Fire Brigades Board; illustrated with maps.

Pocatello, Ohio—Typewritten copy of the annual fire department report; nine pages.

Schenectady, N. Y., Bureau of Fire—Condensed report of the Bureau of Fire; sixteen pages.

South Dakota Fire Marshal—Nineteenth annual report of the state fire marshal of South Dakota for the period ending June 30, 1926; twenty pages and cover.

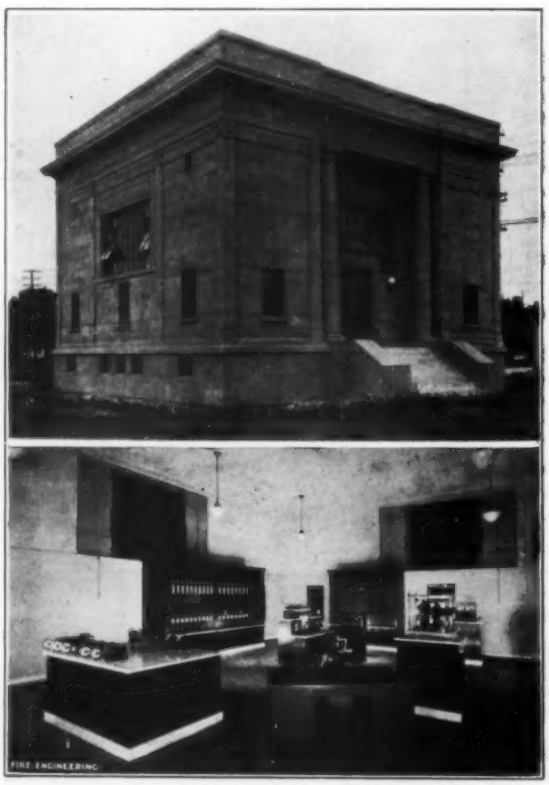
British Columbia—Fourth annual report of the fire marshal for the province of British Columbia with statistics for the year, 1925; twenty-two pages and cover.

Lowell, Mass.—Annual report of the chief engineer of the fire department; thirty pages covering the activities of the department for the past year.

Elizabeth, N. J.—Twenty-fifth annual report of the Board of Fire Commissioners of Elizabeth, N. J.; thirty-five pages and cover. Complete with the response made by fire apparatus the past year.

Boston Protective Department, Boston, Mass.—Fifty-second annual report of the activities of this department; twenty-four pages complete with charts showing the activities and the work accomplished.

Fire Marshal of Louisiana—Twenty-first annual report of the fire marshal of Louisiana; thirty-one pages, illustrated and containing tables of the classification of fires in the state, and the deaths and injuries resulting therefrom.



Stockton, Cal., Has Imposing Fire Alarm Station

An isolated fire alarm headquarters building has been erected in Stockton, Cal., and it houses both the police and fire alarm telegraph systems. This building is shown in the upper photograph; the lower one shows the fire alarm equipment furnished by the Gamewell Company. It consists of two ten-circuit storage battery boards, one ten-circuit relay board, one eight-circuit combination primary and secondary alarm board, one thirty-circuit protector board, one thirty-circuit line terminal board, one repeater switchboard ,one ten-circuit semi-automatic repeater with tandem control, four five-shelf metal batery racks, batteries, two motor generator sets with control panel, and other equipment. The system at present serves an area of about seven and one half miles.

DONTFEAR

Smoke and Fume Respirator

Firemen who enter buildings filled with smoke, fumes and poisonous gases will find the "DONTFEAR" an absolute protection. Hang around neck before putting on helmet, always ready for use.

Price $5. With airtight goggles and 5 extra canisters $7.50.

Gibbs-Wahlert Mask Co.

Factory: 386 Jay St., Brooklyn, N. Y.

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SOUTHWORTH

Quality Fire Apparatus

300 to 750 Gallon Triple Combination Pumpers, City Service Trucks, Combinations and Chemical Cars.

Connections solicited throughout the East

Southworth Machine Company

Fire Apparatus Division

Address all correspondence to the Chelsea Office.

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Factory Portland, Maine

In a HENDERSON
Uniform

you always get correct tailoring, dependable quality, reliable workmanship, at the lowest prices consistent with values.

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Write giving Number of Outfits desired and color Cloth preferred.

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"FAMOUS KALAMAZOO"

Firemen's Uniforms has been proven by thousands of firemen. Catalog F501 will tell you all about them.

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JACOB REED'S SONS

Founded 1824 by Jacob Reed

FIREMEN'S UNIFORMS

Thoroughly tailored of especially selected fabrics. Uniforms that look well, wear well and that will give entirely satisfactory service.

Reed's Uniforms are most economical because they represent full value for the amount expended.

Write for catalog and prices.

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THE BI-LATERAL FIRE HOSE CO.

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If you purchase BI-LATERAL FIRE HOSE it will increase the value of your hose-carrying apparatus more than the cost of the load of Bi-Lateral Fire Hose.

We can load from 25% to 33% more and when coupled with rocker lug couplings the Bi-Lateral hose makes an apparatus one to be proud of and as near perfect as possible to do quick and efficient service.

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Better Rubber. Longer Life. Better Fitted. Moulded to Fit the Face. Better Vision. Renewable Lenses. Better Air. Better Work. Low Prices. High Quality.

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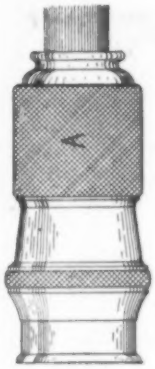
The Woodhouse Mfg. Co., Inc

156 Chambers St., New York

D. A. Woodhouse, Pres. and Gen. Mgr. George J. Kuss, Vice-Pres. and Treas.



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Four Points of Superiority

1—It Fits the Stream to the Blaze.

2—It is a Perfect Shut Off Nozzle.

Can be opened or closed instantly but closing is so gradual that there can be no water hammer—No Burst Hose.

Watch for Point 3, Next Issue.

Full description on request.

L. P. Brown Machine & Tool Co.,
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Novo Acid Jars & Holders

of every description, stronger than lead and none-corrosive. Used by departments throughout the country.

Chemical Tanks and Lally Quick Opening and Self-packing Top for Chemical Tanks

Lally Improved Fire Hose Couplings, Fire Extinguishers and Charges, Fire Hose and Fire Department Supplies in General

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LALLY FIRE APPLIANCE CO.

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HALE PUMPS

LONGER effective life, higher efficiency and greater freedom from trouble may be had by using Hale Dreadnaught Fire Pumps.

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FIRE BOAT EQUIPMENT

Invincible and Callahan Nozzles

Fire Department Supplies

are in use throughout the country and giving unsurpassed service.

Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.

You will find that it pays.

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221 High St. Established 1837 **Boston, Mass.**

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1320 Ridge Ave., Philadelphia, Pa.

Established 1864

Clay Automatic Door Spring Devices for fire stations save valuable minutes in getting to fires. Write for details.

Eastman Improved Platforms and Holders

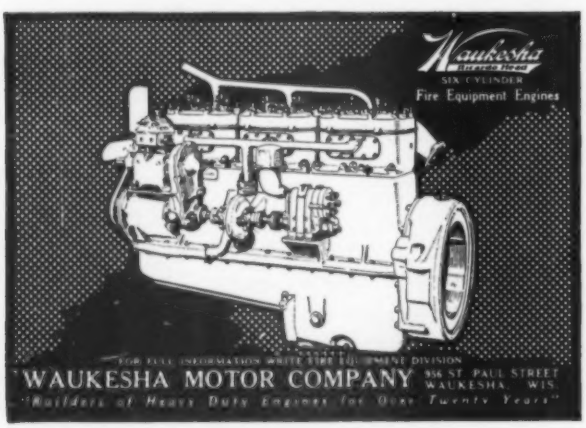
Write for Catalogue

are indispensable where high pressure service is required. With Eastman equipment any size streams can be easily handled by one man.

Eastman Nozzles and DeLuge Sets

are designed by engineers who for over thirty years have specialized in equipment for producing fire-fighting streams that are unsurpassed for solidarity, distance and effectiveness.

Samuel Eastman Co.,
Concord, N. H.



When in the Market for New Equipment

please write us and we shall be glad to have the right manufacturers provide you with complete specifications and prices for your consideration. This service won't cost a cent nor place you under any obligation whatever. We just want to cooperate both with you and with manufacturers in every possible way.

FIRE ENGINEERING
225 W. 34th St., N. Y. C.

FALSE ALARMS

FIRE ALARMS' LATEST

Accumulated gas in a sewer in Boston, Mass., threw the manhole cover to a fire alarm box nearby, breaking the glass of the box and turning in an alarm.

A FIERY TALK

In the midst of a talk on fire prevention before fire wardens in Massachusetts, M. C. Hutchins, state warden was obliged to halt his address while members of the audience extinguished a blaze in a cuspidor near the speaker. The blaze started when the warden threw a lighted match into the receptacle.

HOW SIMPLE?

Commissioner Hultman of Boston attended a demonstration of various types of fire alarm boxes in order to find a box that would be most suited to the city. The newspaper account in the *Boston Globe* reads as follows:

The commissioner is trying to select a box which will be simple of operation. His idea is a box which would be operated by pressing a button.

GUARANTEED

"Are you quite sure that this suit won't shrink if it gets wet on me?" said a customer in a clothing store.

"My friend," replied the enterprising salesman, "every fire company in the city has squirted water on that suit."

FAITHFUL TO THE LAST

On the concert program of one of the larger orchestras not long ago was Beethoven's "Lenore" overture, the two climaxes of which are followed by a trumpet passage by a musician off stage. The first climax came but not a sound was heard from the trumpet.

The conductor, considerably annoyed went on to the second. Again there was silence. This time, the overture being finished, he rushed to the wings.

There he found the trumpet player still arguing with the firemen who was back stage to see that the fire laws were being obeyed and who was trained in the niceties of etiquette.

"I tell you you can't play that thing back here," the fireman was saying. "There's a concert going on."

THEY TOLD HIM

His one hobby was to rush to all of the large fires. Regardless of what time the fire occurred in his progressive village, he was always one of the first ones on the scene, and while he was of no help to the firemen, he derived a great deal of enjoyment from watching the others work.

He had saved up a little money and so he decided to take his annual vacation in the nearby city. Although he enjoyed the sights, he missed the thrill of going to a fire. On one of his walks about the city, he heard a fire gong. It was a company returning from a fire. Excitedly he rushed to the center of the road and waved his arms. The apparatus stopped.

"I want a big fire," he shouted. "—A big fire! Can you tell me where to go?"

They did.

ONLY DISTANT

Two firemen had just taken a civil service examination for lieutenant and were comparing notes. Together they reworked one of the problems and the correct answer was obtained.

"How far off were you from the correct answer?" asked one of the other.

"Only four seats away," was the reply.

PROPERLY TRAINED

A mother was trying to instill in her small son, Willie, the habit of doing exactly as he was told. One day she said to him, "Willie," go and see whether there is water running in the tub."

Willie went and returned. "Yes, mother," he said, "the water was running and I turned it off."

"Willie," said his mother, "how many times have I told you to do as you are told? I did not wish to shut the water off, I wanted to fill the tub."

After several such incidents, Willie seemed to have grasped the idea.

Several days later she thought that she smelled something burning and putting her head out of the window she called to Willie who was playing in the yard, "Look and see if anything is burning around the house."

Willie was gone for five or ten minutes and then came back leisurely and started to play again. His mother, impatient at the delay, called to him sharply and asked if she were correct.

"Yes, mother," he replied, "it's our house."

HE WANTED SERVICE

At a firemen's convention in one of the western cities, two delegates who arrived a day late found that all of the hotel accommodations were taken. The hotel proprietor assured them that the only possible place to spend the night was in the fire station across the street. Since no other place could be found, the delegates went to the fire house to spend the night.

About four o'clock in the morning, the hotel proprietor awoke by the sudden ringing of the fire bell. He shouted to his son to go and see what was the matter.

The boy returned soon. "Ain't nothing the matter, pop, only the gents at the fire house wants a couple of drinks."

THE FIREMAN'S DAY "OFF."

Drawing by Ralph W. McBrien, Lynn, Mass., Fire Department.

Oh, for the life of a fireman! When he is not at the fire station he is probably at his home, and when he is at home, his day off is something like this—peaceful and quiet. From the appearance of the home-loving fireman, the chances are that he is wishing to be enjoying the "ease" of the fire station.

RED ARROW SIREN

Siren with Storm Hood

1. Double-tone, and of greatest carrying power.
2. Ball bearings throughout.
3. Accurately machined and balanced.

30 Days' Free Trial

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Sauk City, Wis.

"Pirsch" Builds Complete Line of Motor Apparatus
Let Us Submit Bids on Your New Apparatus
Catalogue No. 16 Now Ready! Send for it.

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FIRE APPARATUS

All Types — All Sizes

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MAXIM MOTOR COMPANY, Middleboro, Mass.
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Motor Fire Apparatus

Write for literature and prices on our 250, 350, 500 and 750-gallon triple combinations, chemical and hose combinations and city service trucks.

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Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

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EDDY VALVE CO.
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The "Corey" Fire Hydrant of the improved Rensselaer type is the easiest to operate of any on the market.

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FILL IN AND MAIL TO
RENSSELAER VALVE CO., Troy, N. Y.
Send me Hydrant Book, No. 9.

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You can MAKE THEM HEAR you by using the same type of signal that is being used by the Locomotive. And why not? For 75 years the great American Railroads have been using WHISTLES to attract attention to an approaching train. If more effective warning signals existed, the railroads would be using them today—for they are spending millions annually to prevent the **DESTRUCTION of LIFE and PROPERTY.** Our Engineering Department has now made it possible for Fire Apparatus to also enjoy the protection of

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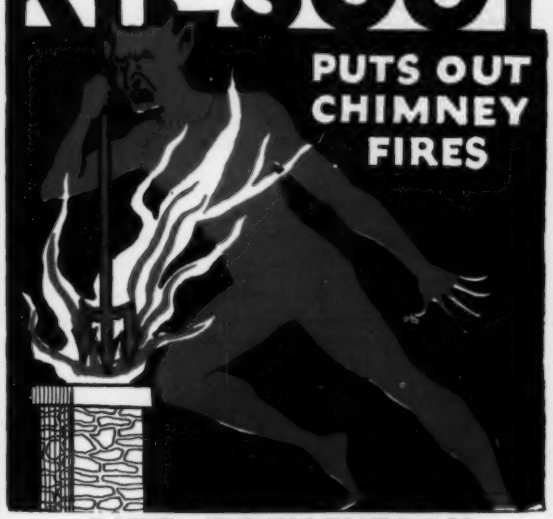
A Warning Signal that Warns

BUCKEYE IRON & BRASS WORKS ~ DAYTON, OHIO

KILSOOT



FIRE PREVENTION

A better, safer and surer way to prevent and extinguish chimney fires is offered to fire chiefs and fire prevention bureaus in the use of "Kilsoot."

We repeat our offer to send liberal samples and full details regarding this remarkable chemical product—gladly furnished upon request.

KILSOOT CHEMICAL COMPANY, INC.
530 West 58th St., New York
Also makers of "Chimnee-Sweep"

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FIRE HYDRANTS

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HIGH PRESSURE

Service

NOTE—

The positive waste value.

All operating threads are dry, being above the stuffing-box.

No toggles, no small, quick-wearing parts.

All moving parts are bronze or bronze-bushed.

The outside casing permits replacing a two-way standpipe with a steamer and two-way standpipe without digging up the ground.

An easily installed
EXTENSION SECTION
readily adapts them to new grades.

VALVES and BOXES
CAST IRON PIPE
(Sand-Cast or "Sand-Spun")
FITTINGS

R. D. WOOD & CO., Phila., Pa.

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have been the recognized standard for fire departments for almost 50 years. Used everywhere. More than 900 designs. Send for illustrated catalog and prices.

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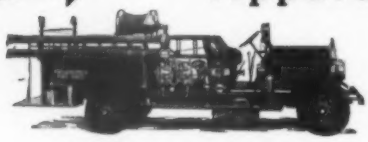
Sanford Fire Apparatus



All Types and Sizes

Fire Apparatus Division
SANFORD MOTOR TRUCK CO.
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Builders of Quality Products for 15 Years

C. A. M.

The Greatest of All Fire Apparatus Sirens

Unconditionally Guaranteed

See our page ad in last issue

C. A. M. Manufacturing Co.
802 Humboldt Bank Bldg., San Francisco, Cal.

Quick-Acting Reliable

Anderson-Hale Improved

FIRE STATION DOOR OPENERS

Over 1,300 sets of Anderson-Hale Fire Station Door Openers are in successful use. They provide simple, durable, quick-acting doors that open inward. No obstruction to sidewalk. Attractive in appearance, cannot sag, closes tight, excludes cold, gives clear opening. Opens from driver's seat or from floor. Many repeat orders from users.

Write for complete information.

The Anderson Coupling & Fire Supply Co.
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Fire Apparatus
Fire Department Ladders
Fire Fighting Appliances

Write us when interested

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have all the good points.

- *The most convenient size—12 x 18 feet*
- *The right weight—About 38 pounds*
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- *An absolutely waterproof double coating of a high grade, long life, rubber compound*

Many large Protective Departments use them

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Send for your copy today

YOU will be intensely interested in this booklet. It contains a specific message every citizen — especially every city official should read. We have a limited supply of these booklets. If you will send us your name and address, we will be glad to send you a copy.

Forty years of building Powerful High Grade Fire Apparatus. ¶ 6,000 Boyer sealed Cartridge Chemical Tanks in operation and never a failure.

Boyer Fire Apparatus Co.
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LARKIN Shut-off Nozzles

Over 2000 Fire Departments

have 15,000 Larkin Shut-off Nozzles in service. They have a successful record that is not exceeded by any article used in the fire service. Specify and insist upon them in buying new apparatus.

Write for catalog

The LARKIN Mfg. Co.
Dayton, Ohio

High Grade Fire Dept. Supplies of All Kinds

A Word to Our Readers:

DO you ever stop to think that every advertiser in these pages offers either a **product** or a **service** that has certain unique advantages which he believes will interest and be of value to you? Otherwise it wouldn't be worth his while to advertise.

Almost every page contains the offer of some product or service that you would find of value in your department. It will pay you to read the advertising pages as carefully as you do the editorial.

"The wise man is he who is always willing to learn." It will pay you to read the advertising pages carefully. THE PUBLISHERS.

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It's Yours! Help Yourself! Use It!

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Fire Protection Equipment And Supplies

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3 Acid Jars and Rings.
4 Aerial Ladders, Detachable.
5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
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19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Cable & Wire, Fire Alarm.
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26 Chemical Engines and Tanks.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equipment, Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Fire, Soda & Acid.
35 Extinguishers, Fire, Tetrachloride.
36 Extinguishers, Fire, Foam.
37 Extinguishers, Fire, Powder.
38 Fire Boat Nozzle Equipment.
39 Fire Department Supplies, General.
40 Fire Drills & Organizations.
41 Fire Exit Devices, Door Opening.
42 Fire Alarm Posts.
43 Fire Escapes, Portable.
44 Fire Escapes, Rigid.
45 First Aid Equipment.
46 Flare Lights.
47 Flashlights, Hand.
48 Foam Liquid for Extinguishers.
49 Gas Masks and Respirators.
50 Gas & Smoke Helmets.
51 Gasoline & Oil Handling Equipment.
52 Goggles, Firemen's.
53 Helmets, Metal, etc.
54 Hose Carts, Reels & Racks.

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56 Hose Fire.
57 Hose, Chemical.
58 Hose Holders.
59 Hose Jackets.
60 Hose Standardization Tools.
61 Hydrant Draining Pumps.
62 Hydrants, Fire.
63 Jacks for Fire Trucks.
64 Jacks, Shoring & Prying.
65 Ladders, Fire.
66 Lightning Arresters.
67 Motorcycles, Fire Dept. Equipped.
68 Nets, Life.
69 Nozzles, Pipes & Misc. Brass Goods.
70 Packings, Pump.
71 Pads, Pole Hole.
72 Paints, Fire Resisting.
73 Priming Ether, Motor.
74 Pumping Cars, Standard.
75 Pumping Cars, Foam.
76 Pumps, Fire Apparatus.
77 Pumps, Fire Service, Stationary.
78 Pumps, Portable, for Fire Protection.
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80 Relief Valves.
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82 Rubber Clothing.
83 Searchlights.
84 Shingles, Fire Retardant.
85 Shirts, Firemen's Special.
86 Sirens, Apparatus & Chiefs' Cars.
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92 Sprinkler Supervisory Service.
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104 Uniforms.
105 Water Towers.
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Tall office buildings;
Piano factories;
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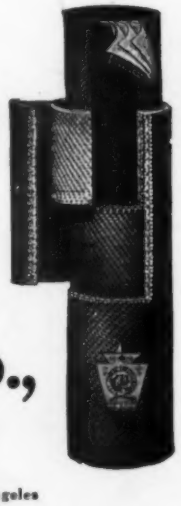

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